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AGRICULTURAL EDUCATION.

The Annual Address Delivered before the New York State Agricultural Society, at Syracuse, Oct. 8th, 1858, by the HON. J. R. WILLIAMS. *President of the Michigan Agricultural College.*

We have seldom, if ever, met with an address delivered before any agricultural association, of greater practical importance, or one more applicable to the present time and to our country in general, than that of President Williams. It is an address that should be read by every farmer in the United States. We extract a considerable portion of it, and only regret that the limits of our monthly publication do not enable us to give it entire.

Mr. President and Gentlemen of the New York State Agricultural Society:

I propose to speak to you to-day upon AGRICULTURAL EDUCATION, a subject that has heretofore engaged your earnest deliberations.

The relative importance of Agriculture, as a human pursuit, demands little discussion.—Should vegetation be suspended for six months, all animal life would perish, and our race become extinct. All industry, all prosperity, all human existence then, depend on Agricultural production. We often talk of Manufacturing countries, of Commercial countries, of Agricultural countries, but there is no large community, whose Agricultural interests do not far exceed all other interests combined. Great Britain is perhaps regarded as the most exclusively Manufacturing and Commercial Nation, that has ever existed. Yet vast and wonderful as her Manufactures are, penetrating as her Commerce does every ocean and every inlet on the face of the globe, yet just so far as she excels other nations in Commerce and Manufactures, she excels them in Agriculture also. The returns of her Income Tax show, that two-thirds of all the net income from the industry of the empire, is derived from Agriculture. In some nations, one-half, in others, nineteen-twentieths of the people, depend on the soil for subsistence. The average is probably seven-eights. Such being the great controlling fact, the trades, the pursuits, and professions, which the subdivision of industry, among civilized men, renders necessary, have been the especial objects of protection and sympathy, while Agriculture, the nursing mother of all pursuits, just begins to attract that aid and encouragement, which its relative importance demands. * * * * * * * * * * *

I would gladly continue the contemplation of the fairest features of the subject. Let us view it, however, in a gloomier and far more suggestive aspect, more worthy of your serious reflections. This splendid exhibition does not tell the whole truth. It is not a type, either of the actual condition, or the actual husbandry of the whole country. It is selected. It is exceptional. It affords evidences of what glorious results can be accomplished, rather than of what has generally been attained. Thousands to-day witness for the first time the perfection and beauty to which animal and vegetable productions, and agricultural implements can be brought. A new world is open to them in culture. What proportion of the farmers of the State raise such stock, or grain or vegetables, or use such tools, as this exhibition affords? One excels in horses, another in sheep, another in cattle, another in large crops of grain. But each production depends on the observance of inexorable laws. A farmer who excels in one could excel in all. But I will venture to say that there are not twenty farmers in the State who carry the same comprehensive knowledge and fidelity into all the details of their business,

and bring all the products of their industry to anything like an equal perfection.

Turn with me to the census of 1850, and you will find that the average production of wheat in the State of New York was twelve bushels, of corn twenty-seven bushels, and of hay one and one-eighth tons per acre. You will find sufficient evidences within these grounds of crops three or four times as large. It will be readily conceded that these crops can be and ought to be doubled. Allow for increased area under cultivation at this time, double the crop and then deduct one-third of the increased production for increased expense of cultivation, and the loss to the State on these three crops, stinted and deficient as they are, is at least $50,000,000.

This is not all. New York probably has 15,000,000 acres of cultivated land. All over her surface are exhausted and neglected fields. They have been cropped and overcropped. No subsoil plough has penetrated them. They are renovated by no green crops, no rotation, no fertilizers. So much area and capital lie idle and useless. That 10,000,000 acres of land in New York are annually damaged twenty cents per acre, would be a moderate calculation. Here is a loss of $2,000,000 annually.

Let us generalize a little. Let us apply similar calculations to the whole Union. The average production of wheat in the United States, in 1850, was less than eleven bushels, of corn, less than twenty-five and one-half bushels, and of hay, one and one fifth tons per acre. The corn crop was valued at $296,035,552, the wheat crop at $100,485,944, the hay crop at $96,870,494. The aggregate value was $493,391,990. Double the production, and deduct one-third of the increase for increased cost, and the profit to the whole nation would be $328,927,993.

I need not pause to call your attention to the desolated and abandoned plantations, all over the Southern States. Millions of the virgin soils of the Western States have already been injured by exhaustive cultivation. Our people seem to be betrayed into this ruinous policy, by the facilities with which new lands can be obtained to replace the exhausted. While the average size of farms is 203 acres, as it was in 1850, this wasting system may be continued. Economy in practice keeps pace, in some measure, with density of population. Accordingly, in Belgium, where the population is 336 to the square mile, and in China, where they have nearly reached the starvation point, the necessity of self-preservation has driven the people to many of the same methods that are with us the result of scientific deduction.

The worst result of a thriftless culture is not told. Too large a proportion of the farmers of the West, and the planters of the South, owe their crops in advance. They pay the crops of this year to extinguish the debts of the last. The consequence of this fatal negligence, pecuniarily, socially, personally, nationally, I have not time to pursue. I will remind you, however, that the rural population meets a terrible retribution in the tribute paid by labor to capital, the perpetual debt, which hangs like an incubus upon their energies, of country to city, and the disproportionate share of human earnings concentrated in great cities, some of which is dedicated to noble uses, but too much of it consumed in reckless extravagance, in crime and debasing indulgences.

All that our country needs, with her vast untested capacities, in order to exhibit the most prodigious results in Agriculture, that the world has yet witnessed, is KNOWLEDGE; penetrating deeply, and disseminated universally among the rural population. * * * * * * * * *

If there is any pursuit which demands for its successful prosecution, acute powers of observation, comprehensive intellect, and most abundant and varied knowledge, it is that of the farmer. There is scarcely a science which will not shed a flood of light along the pathway of the farmer, and a knowledge of the practical arts and trades of life, must constantly aid and relieve him. So thickly do objects of interest and study cluster around him, that if an enthusiast, he might exhaust a life-time on his own farm in pursuit of a single science.

The farmer deals with life. He is entrusted with the life and health of his own family. All animals upon his farm are dependant upon him. He expends his labor and skill in promotion of vegetable life. How important is it, therefore, that he possess a knowledge of Animal and Vegetable Physiology. The farmer should be himself a fully developed and healthy man. Yet living under conditions, and in an atmosphere, so much more propitious to health, than the sedentary man, or the pent up inhabitant of cities, how does it happen that the average life of farmers, very little exceeds the average life of men in other pursuits. The reason is evident. While the life of the citizen is abridged by effeminacy, noxious air, and contagious diseases, the life of the farmer is shortened by excessive exposures, imprudences, and a general defiance of the laws of health. A farmer should be familiar with the general laws, by which all animals grow, thrive and decay. When his own family are in danger, he demands the skill of a physician, who has bestowed a great share of his life in obtaining the necessary knowledge of the human frame, and its mysterious functions. But every domesticated animal belongs to the same class of animals, mammalia as himself, endowed with a similar, and in some cases as delicate an organization. He should know enough, at least, not to expose them to vague quackery. You have perhaps half a million of horses in the state of New York. How many are destroyed by quackery? and what loss incurred? At least a million of dollars annually. So important does the French government consider this subject, that it supports three great Veterinary Colleges. They are resorted to by students from all France, and 240 Scholarships are distributed at the Government expense, 68 at large, and two to each of the eighty-six Departments of France.

I should not expect every farmer to be a physician, but how invaluable to him, often living in an isolated position, would be a mastery of the general principles, on which the preservation of health depends. I need not say how many thousand victims could be rescued from

gross superstition, or the vilest quackery.

The farmer's principal vocation is to deal with vegetable life. The assumption is, that he knows all about it, when in fact he knows very little. The laws by which a single stalk of corn is sustained, and grows, are as inscrutable as those by which Uranus is whirled in its vast orbit, yes more, because the elements, the rapidity, the course of the planet's motion are comprehended, while the laws of the growth of the tiniest plant are not. We plough, drain, and pulverize the soil, and plant the seed, and nurse it.—It grapples its hundred rootlets widely into the soil, and throws out its branches to gather food from the air, the rains, the dews. It thrives vigorously, and pushes out stronger roots, the atmosphere and the soil reciprocating the aids which each affords the other. The farmer cultivates the plant, and destroys all rival vegetables likely to exhaust or choke it. But his appliances are mechanical. His knowledge is arrested on the very threshold we desire to cross. The mysterious agencies by which the plant is invigorated, and by which it converts into grain, fruit and vegetables, its invisible and intangible food, are beyond his control. An endless field for scientific research is here opened.

Botany will constantly illustrate the pursuit of the farmer. I need only call your attention to the subject of hybridization of plants, by which new varieties are multiplied. The display of flowers, so multiform and gorgeous, and those lengthened benches, groaning under huge piles of vegetables brought to such perfection, attest how much our gardens, parlors and tables, owe to science in this department. Here is an instance, where research, purely scientific, has often doubled the value of the earnings of the farmer or the gardener. What do croakers against Books and Science do with such a fact?

Horticulture can hardly be pursued without a knowledge of this subject. Farmers in general treat the subject of Horticulture with too much contempt. Nothing throws around the homestead so many attractions as the orchard and garden. Even to the common subject of grafting and budding, a great majority of farmers have paid little attention. The pomologists here will tell you that they have been frequently asked to-day for specimens of cultivated fruit, for propagation of the same kinds, from the pit or seed. This seems incredible, but so it is. Practical men have laughed over the story of the College educated gentleman who lost a shoe off his horse and carried a skillet handle to the blacksmith to repair it with. Yet he exhibited no greater ignorance than the man who would attempt to raise cultivated fruit from the seed or pit.

Chemistry perhaps, of all the sciences, is that which will aid the farmer most. Its analyses will show the constituent parts of animal and vegetable matter. It will eliminate from the fibrous, the nutritive portions. It will prove which are the most profitable, and in many cases, which are the most healthy productions. It will compare different grains, and tell you the relative portions of gluten, starch, oil, sugar, albumen, water, potash, lime, &c., contained by each. It will disclose which grain possesses most of the elements conducive to vital heat to the animal, which contains the most fattening material, and which will build up fastest the muscular system.

Chemistry will also show the imperative necessity of saving everything of an animal or vegetable nature, and indicate the most economical and sure methods of preservation. The sterilization of land is owing to the fact, that organic matter is sold in the crop, burned, evaporated, or whirled away in the running stream. I doubt not, there are daily thrown into the streets of this city, or into the canal, such quantities of organic matter, in process of decomposition, as would fertilize thousands and tens of thousands of acres of land. Chemistry will teach you how it can be composted and preserved, and its volatile and offensive elements arrested, deodorized, packed away for future uses. Within the State of New York, untold amounts of wealth are annually wasted for want of a little knowledge of Chemistry.—Almost every locality contains vegetable deposits, or lime, or marl, or some renovating element. The barn-yard manure, liquid and solid, the offal of the house, vegetable or animal, composted with muck or peat, the volatile elements held captive by cheap substances for which they have affinity, and the mass preserved till it is thoroughly decayed and assimilated would preserve any farm in a state of productiveness, that would be other-wise soon exhausted. Most estates possess within themselves the elements sufficient to keep them in perpetual fertility. How many millions of dollars would have been saved to the State of New York, had the farmers of the past generation, known, appreciated, and profited by this great, vital, and fundamental law, that all animal and vegetable matter taken from the soil or its equivalent, must be restored to it, or certain ruin commences.

I know that it is somewhat the fashion to decry Agricultural Chemistry, because its analyses of soils have not proved entirely satisfactory. But if Chemistry never analyzed a shovel full of soil, its services would be invaluable in the provinces named. When Chemistry takes the mineral coal, or the medicinal spring, upon a farmer's land, and tells him unerringly the component parts and value, when it takes his food, and the food of his cattle, and tells him what nutriment it contains, when it exposes every adulteration of food, or liquids, or drugs, in which commerce deals, when it detects poison and arrests crime, when it carries its lamp among the miners in the bowels of the earth, and there holds guardianship over human life itself, and we recollect that these acts are but types of its mysterious agency, it ill becomes us to wrest from it, its scales, its crucibles, and its re-agents, when they are applied to the earth, on whose productions teeming millons of men and myriads of animals subsist, to compel her to yield up more of her secrets for amelioration of the condition of the race. When Franklin drew down the lightning with his kite, the skeptics of those days doubtless derided his experiments as futile and dangerous, yet

the last reverberations of the cannon have hardly died upon the ear, the last flickering blaze of the bonfires have hardly expired, that celebrated the most important achievment of man, since the discovery of this continent by Columbus, of which Franklin's experiment was the germ. Let us not discourage science from delving into the earth, if such are the prolific results of her researches elsewhere.

Geology would constantly aid the farmer in a knowledge of the composition of soils. But the bearing of this science upon culture, opens too wide a field for discussion. There can be nothing so startling in romance, or instructive in story, as the mutations of the earth through its geological epochs, till it finally became suitable for the habitation of man.

Mineralogy, Meteorology, Natural History are all subsidiary to the pursuits of the farmer.

The study of Entomology, with the aid of the microscope, is destined to prove of great value to agriculture. Every leaf, every animal is covered with parasites. Insect life crawls and flies everywhere. It is visible and invisible. It is a protective sentinel, or a destructive pest. Some insects live by the destruction of our crops. Some are predatory, and live on insects, or the eggs of insects, most noxious to man. Each crop, each fruit, has its peculiar enemies, in infinite variety. No revelation can be more beautiful and at the same time more valuable, than those of the microscope. The functions, habits, and food of insects are important subjects of investigation. The State appropriation to promote the investigations of Dr. Fitch, the Entomologist of this Society, was therefore an enlightened and judicious act. The most terrible scourge ever known to the wheat crop, the Midge, is now committing its ravages over the continent. Your able and efficient Secretary estimated the loss by its ravages in 1854, in the State of New York alone, at fifteen millions of dollars. It has carried its wide devastation over the wheat zone to the Mississippi. The habits of this insect are partially understood. How and when it deposits its eggs, how it is hatched and fed on the tender kernels of wheat as a grub, how it falls to the earth, and burrows till the following year, how it is warmed into life, and emerges a winged insect just when the wheat is in the milk, and deposits its eggs again—so much is known, but in all attempts to arrest or destroy it we are baffled. He would be ranked among the benefactors of mankind who should discover how to arrest or destroy it. How often does the farmer boast, that he knows all about farming, and asks nothing of science Yet here is a minute insect, not one-tenth of an inch in length. that contests with proud man his right to the most important article of human food, and wrests it from him. Man may arrogate omniscience in his calling, but he cannot cope with this insignificant Midge. * * * * * * * * *

I think I have said enough to prove that every Art and every Science may conspire to increase his enjoyments and profits, and confer dignity and grace upon the tiller of the soil. It s the ART OF ARTS, the SCIENCE OF SCIENCES, where physical and intellectuul capacity, judgment, taste and learning may aid to produce the most triumphant success. It is an erroneous, a contemptible idea, that the highest degree of education cannot be employed in one calling as well as another. Indeed I can conceive of no life, that followed in its comprehensive spirit and grasp, would call more varied powers and acquisitions into action, inspire more of the faculties and energies of man, and test his ingenuity more frequently, than the life of a farmer. The applicatiou of Science to Agriculture has just begun, and is destined to produce wonderful changes in the productions of food and clothing for man. While his profession is liberal, and his sphere of inquiry wide, while his pursuit is calculated to produce harmonious development of mind and body, and continuous health, this ever buoyant, ever cheering, ever glorious reflection must dwell upon the mind of the tiller of the soil, that he helps to create his own support, and clothe and feed his brother man, instead of consuming their substance. In witnessing the development of the crop, from the germination of the seed, till his golden harvests are housed, he need not have perpetrated a wrong. No reckless experiment on life, or property, no compromise with perjury or crime, no trickery nor fraud, nor extortionor, usury, need creep in, to poison the gratification, with which he can proudly smile upon his conquests.

And now arises the question. Are facilities for sufficient education within the reach of the youth of the rural population? It is a vital question, not for you, not for this State only, but for our common country and the age. *

The great *desideratum*, the great need is, a chance for the boy to aid himself. While at the Common School, the boy works upon his father's farm. He earns his education as he proceeds. Labor is there honorable. But he can use his physical system to improve his brain in no wider sphere. Tens of thousands crave the chance to labor three or four hours per day, supporting themselves while improving their minds, but no opportunities are afforded. It may be said that High Schools and Academies are accessible; but it is obvious, that expense and distance render them unavailable to the mass.

Those who resort to the higher Colleges, even to pursue a scientific course of study, become enervated, or at least indifferent to physical toil, and going there at an age when they are most impressible, they are borne along in the irresistible current of opinions and sympathies prevailing there, and not one in fifty becomes a cultivator of the soil. Double, treble, quadruple, the accommodation of existing Universities, and they could receive but a mere fraction of the youth clamoring for education, if any suitable facilities were allowed them to help themselves.

A new order of Institution has therefore become an absolute necessity, where a student can, in part at least, educate himself, when his physical faculties are preserved in their full vigor and elasticity, and where those studies which are most useful to a cultivator of the soil shall be embraced, while those which are least

valuable shall be discarded. To remedy this yawning deficiency, Agricultural and Industrial Colleges are organized in several of the States, and initiatory steps are taken in other States to establish them.

The Agricultural College of the State of Michigan has been in actual operation since May, 13th, 1857. Its Faculty consists of a President and four Professors, and it has accommodations at present for 100 students. It was created in obedience to a requisition of the Revised Constitution of 1850, and organized under a law of 1855. The Farm consists of 676 acres. Its design is to unite physical with mental culture, to afford the student a chance to earn in part his own education, and a chance to apply himself, free of tuition, to those sciences and practical arts, that may render him a scientific farmer and an enlightened citizen. The effort has attracted anxious attention throughout the Union. Applications from other States and Canada have been made sufficient to fill the Institution. This is the first State Institution, and the only exclusively Agricultural one yet in operation on this side of the Atlantic.

The speaker here alludes to what has been and is doing towards agricultural education in New York, Pennsylvania, Maryland, Ohio, Iowa, Minnesota and the older States of Virginia, South Carolina, &c., &c. He then speaks of the agricultural colleges in various parts of Europe, and proceeds as follows:

The first institution of the kind in Europe was at Hofwyl in Switzerland, founded by Fellenburg, a name illustrious in the annals of education. The model school, perhaps of all Europe, is that of Hohenheim, in Wurtemburg. The other most remarkable Colleges are Cirencester in England, Grignon in France, Moglin in Prussia, and Gory Goretzk in Russia. In 1850, Prof. Hitchcock enumerated 352 Agricultural Institutions in Europe, but he omitted those of Sweeden and some other countries. They have been greatly multiplied since that time. I think there are now 500 Colleges, Schools, and Model Farms in Europe, mostly the creation of the last twenty years. Their success is no longer in controversy. Neither prejudice nor ignorance is allowed to crush them. They are regarded as a great and beneficent agency, which governments, in the exercise of a benignant guardianship, are bound to exert, in increasing the productions of the earth and promoting the welfare of the race. They appreciate the great fact that the surest way to promote the prosperity of the State is to enlighten the individual and multiply his energies. I can only make an approximate estimate, but there are probably employed in all the schools in Europe at the present time, 2000 professors and teachers, and 50,000 students are in attendance upon them.

I have said nothing relative to the Course of studies, the discipline, or the plans on which the European schools are conducted. It is sufficient to say that the design of them all is a mastery of the physical sciences and practical arts that bear upon Agriculture, and the harmonicus union of study with labor: Their institutions, however, furnish no models for us. The lower order of schools in Ireland and Russia are for the peasantry, and of a grade not elevated enough to prove useful in this country. The best of their colleges are designed for the education of stewards, agents and teachers, and not for proprietors who labor with their own hands, and who combine, like our countrymen, all the characteristics of landlord, tenant and laborer in the same man.

Mr. Williams concludes his address by an allusion to the Land Bill introduced by Mr. Morrill, at the last session of Congress, for the benefit of Agriculture and the Mechanic Arts in the various States of the Union.

This Bill will undoubtedly be brought before Congress at the approaching session, and we trust will pass by a large majority, for we know of no measure that will do so much to advance the interests of our country.

THE HEDGE---ERRORS IN TRAINING AND CULTIVATION.

We have said but little about the hedge during the past year, having before given the fullest directions on the subject, from the planting of the seed to the completion of the hedge; yet in all our travels we meet with the most reckless disregard of the rules that have been so frequently published that we are almost inclined to regard the whole hedge system in the United States as a failure; not however from any want of adaptation of the Osage Orange to the purpose, but from the lack of regular, systematic treatment on the part of the farmer. The tendency of this error and the consequences we have frequently before alluded to. In all the efforts at hedge making throughout the West, we doubt whether there can now be found one rod of perfect, well formed hedge to a mile that has been set, or even to five miles. The plants have either been set and left to take care of themselves, without cultivation, and have proved a total failure, or if set and partially cultivated, the plants have been run up too speedily to an undue height, without forming sufficient base to turn small animals, while the top has become so much overgrown as to be beyond future management and control. We Americans are so absorbed in money-making that matters which require a set time for special attention are apt to be neglected, and the hedge is just one of those things that must be attended to at the proper time or all is lost, leaving it a nuisance not easily eradicated.

The Osage Orange may be trained into as

perfect and permanent a hedge, where it is free from the depredations of the ground mice and the gopher, as any plant can be in any part of the world. But no one must expect to accomplish this unless he makes up his mind to do the work at just the proper time and in the right manner, from the period of planting the seed to the completion of the hedge, and not only then but on and on through all time. The delay of a single week in the cutting will prove injurious, and a prolonged delay fatal to the entire work. While we have allowed the subject to rest with our readers, it has been the experience of many of them to witness miles of hedges that have proved worse than failures from the causes that we have named.

In training a hedge, after the plants have been properly set in the row, late experience has proved that it is better to let the plants grow a second year before they are cut down, and then they should be cut off even with the surface of the soil, and the cutting repeated, allowing an additional height for the next year, of but three inches, and after this there should be two annual cuttings, winter and summer, with but a few inches increase in height after each cutting, while the lateral or bottom shoots should remain for three or four years uncut, except those which may be making an undue growth compared with the branches generally, these, and any others forming the upright of the hedge, that seem to start with undue vigor compared with the branches generally, should be held in check at all times, by cutting off the ends of the shoots while young and tender; the labor then, for a mile in extent, will require no more time than for a man to walk that distance.

The most important feature in forming a complete hedge, where it is the design of the cultivator to bestow anything like the proper care, as we have before intimated, is in *securing sufficient circulation in the lower lateral branches to give them the required size and strength to answer as a permanent base to the structure.* The natural tendency of the Osage Orange plant is to grow upright; to shorten or cut off the stem of a single plant will cause two or more shoots to start in the place of the one that has been removed and to impart slight additional increase to the size of the lateral branches first formed, but unless watched and the uprights again shortened, the main current of sap will soon be diverted from the lateral branches and concentrated in the uprights, hence the importance of cutting back the plants at the ground the first regular cutting, and then to repeat the shortening at proper intervals, in order to divide and subdivide the main branches, thus multiplying the number by each cutting in order to force as much sap as possible into the lateral branches so as to increase their size and strength and to divide the main flow of sap into the greatest possible number of channels, thus equalizing the branches throughout. This is the great secret of forming a complete, durable and perfect hedge. Without this care and cutting back at the proper times, it is worse than useless to attempt to form live fences. We have watched the result of this treatment the past season with much interest, and have noticed that where the lateral branches have ceased entirely to grow and were altogether too small to answer the purpose of a substantial hedge, a single cutting of the main branches, which were running up with undue vigor, caused a renewal of the growth of the lower brahches, increasing their size and strength to a degree that could have been caused in no other way. This important feature of hedge growing must be remembered—frequent cutting at the beginning, leaving but a short growth at the intervals—multiplying the branches, increasing the laterals and diverting as much of the sap from the central and upright shoots as possible. This, with proper cultivation of the soil from the beginning, will insure a cheap, substantial and beautiful hedge, as long as the proper labor is bestowed.

WIRE FENCE.

Messrs. Editors.—As you have an opportunity of visiting various portions of the country, and have undoubtedly seen many specimens of wire fence, will you inform me whether they have proved what was once claimed for them, or are they classed among the failures. C. F. A.

In our travels we have seen many attempts at fence-making with wire, and the results are quite various. Among them, some have proved substantial, durable fences, while the greatest proportion are complete failures. Like the Osage Orange fence, where they have been of the right material and put up in a proper manner, they make a good and durable fence, and one well adapted to prairie lands; but generally, they have been made of wire too small, and put up in great lengths, the wire imperfectly stretched, and not properly secured, and the result is the wires have broken and become so loosened and slack that they are useless as a fence and intolerable eye sores. Yet, with all these failures, as with the Osage Orange hedge,

it may be made a substantial and valuable fence.

In making a wire fence, the larger the wire and the shorter the lengths the better the fence will be, but the more it will cost. Securing the object and at the same time keeping economy in view, wire called number 4 which is about a quarter of an inch in diameter is best. This size will bear to be made in lengths, not to exceed, say three hundred feet, planting a substantial post, or securing it to a tree at each end of every length of wire. Each length should be drawn as tight as possible and the ends firmly secured. Intermediate between these small posts or stakes (young locust is best) about three inches in diameter set about eight feet apart; to these the wires should be secured with staples driven so firmly in that the wire cannot slip under them; with these lengths thus secured the expansion and contraction by heat and cold is so divided between the posts that no serious injury results from it—this stretching and shrinking and insecure fastening of too small wire has been the chief cause of the failure of many wire fences.

The fence is greatly improved by nailing at the bottom a strip of plank six or eight inches wide; this renders the posts more firm and answers a good purpose to turn pigs, &c.; it also renders the line of the fence more visible to the stock, and they are less likely to come in contact with it.

In tightening the wires, first secure the ends to one post and then with a kind of hand windlass, easily made, draw them tight and secure them firmly at the other end.

HUNGARIAN GRASS.

Believing a brief account of this grass and its merits may not be amiss, and knowing that the circulating medium of the "Newspaper" extends through all the States of our Union, I will, for the benefit and interest of our farming community East and West, North and South, endeavor to say something relative to its introduction in America, of its productiveness, and also of its use, but feel certain I shall not be able to speak of its merits as it deserves. Its introduction in the United States was, as near as I can learn, in 1853, by a native of Hungary. A gentleman, then residing in the State of Illinois, procured a small handful of the seed from the Hungarian exile and took it to Iowa, and sowed it first on the prairies of the great West. The demand increasing, the little handful has fallen far short of supplying the cry for more seed. As yet its cultivation is chiefly limited to but two or three counties in Iowa, but such is the demand for it that its seed sells at unusual high rates. Its productiveness both for hay and seed is such that it is supplanting oats and timothy, and even the numberless acres of corn are waning before it and giving it place. From three to four tons of hay and from twenty-five to thirty bushels of seed is an average crop per acre, yet it has frequently been known to produce at one cutting six tons of hay and forty bushels of seed per acre. Drouth does not appear to effect its growth, its long roots striking deep into the earth draw up the substance from a depth that our common grasses, owing to their short roots, cannot reach, which enables it to withstand the hot, dry blasts of midsummer when other grasses fail. Horses and stock of all kinds give the hay made from this grass the preference over all others. A horse fed on it with the seed left on requires no other grain through the winter; cattle and cows fatten on it, and as a food for young poultry it cannot be surpassed, as the seed seems to be suited precisely in quality and size to their wants. I have, as I said, given a very brief account of its merits, but hope some one more competent than your humble servant will give it more fully. I would further say, from what I know of it, that all that can procure even but a small portion of the seed and sow it will be well repaid by its proceeds for the present year's subscription to your useful "Newspaper." The above can be relied upon as no exaggeration, but falls far short doing the subject justice.—*Ex.* L. R.

McDonough Co., Ill, 1858.

Farmer's Creed.

We believe that the soil loves to eat as well as the owner, and ought, therefore, to be well manured.

We believe in going to the bottom of things, and therefore in deep plowing and enough of it. All the better if it be a subsoil plow.

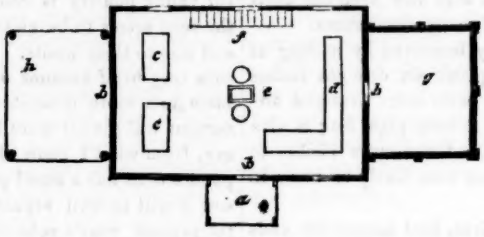
We believe in large crops, which leave land better than they found it—making both the farm and the farmer rich at once.

We believe that every farm should own a good farmer.

We believe that the best fertilizer of any soil is a spirit of industry, enterprise and intelligence—without this, lime, gypsum and guano, will be of little use.

We believe in good fences, good barns, and good farm-houses, good orchards, and children enough to gather the fruit.

CHEESE DAIRY HOUSE.



GROUND PLAN.

This building is one and a half stories high, with a broad spreading roof of 45° pitch; the ground plan is 10 feet between joists, and the posts 16 feet high. An ice-house is at one end, and a wood shed at the opposite end, of the same size. This building is supposed to be erected near the milking sheds of the farm, and in contiguity to the feeding troughs of the cows, or the piggery, and adapted to the convenience of feeding the whey to whichever of these animals the dairyman may select, as both, or either are required to consume it; and to which it may be conveyed in spouts from the dairy-room.

Interior Arrangements.—The front door is protected by a light porch (a) entering by a door (b) the main dairy room. The cheese presses (cc) occupy the left end of the room, between which a passage leads through a door (l) into the wood shed (h), open on all sides, with its roof resting on four posts set in the ground.—The large cheese table (d) stands on the opposite end, and is 3 feet wide. In the center of the room is a chimney (e) with a whey and water boiler, and vats on each side. A flight of stairs (f) leading into the storage room above, is in the rear. A door, (b) on the extreme right leads into the ice-house (g). There are four windows to the room—two on each side, front and rear, in the loft are placed the shelves for storing the cheese, as soon as sufficiently prepared on the temporary table below. This loft is thoroughly ventilated by windows, and the heat of the sun upon it ripens the cheese rapidly for market. A trap-door through the floors, over which is hung a tackle, admits the cheese from below, or passes it down when prepared for market.

The cheese house should, if possible, be placed on a sloping bank, when it is designed tofeed the whey to pigs; and even when it is fed to cows, it is more convenient to pass it to them on a lower level, than to carry it out in buckets. It may, however, if on level ground, be discharged into vats, in a cellar below, and pumped out as wanted. A cellar is convenient—indeed, almost indispensable—under the cheese dairy; and water should be so near as to be easily pumped or drawn into the vats and kettles used in running up the curd, or for washing the utensils used in the work. When the milk is kept over night, for the next morning's curd, temporary tables may be placed near the ice-room, to hold the pans or tubs in which it may be set,

and the ice used to temper the milk to the proper degree for raising the cream. If the dairy be of such extent as to require larger accommodation than the plan here suggested, a room or two may be partitioned off from the main milk and pressing room, for washing the vessels, and other articles employed, and for setting the milk. Every facility should be made for neatness in all the operations connected with the work.

Different accommodations are required for making the different kinds of cheese which our varied markets demand, and in the fitting up of the dairy house, no *positive* plan of arrangement can be laid down, suited alike to all the work which may be demanded. The dairyman, therefore, will best arrange all these for the particular convenience which he requires. The main plan and style of building, however, we think will be generally approved, as being an agreeable architectural style, and of convenient construction and shape for the objects intended.

We are indebted to the Editor of the *Genesee Farmer* for the above cut. The article is taken from Allen's Rural Architecture.

THE VALLEY FARMER.

Messrs Editors.— Permit me to address a few lines to Western farmers on the subject of supporting a *home* agricultural paper. To those who have been reading your Magazine for the last three years, it seems unneccessary to say anything in order to induce them to continue to take it; for I doubt not, they have, like myself, found it so valuable, so practical, containing so much of importance to every farmer and fruit grower of the West, that they would not consent to do without it. Therefore it is not to old subscribers that I appeal to renew their subscriptions—but I wish to solicit them to aid in making known the real merits of your journal. I know there are thousands of farmers throughout the great Mississippi Valley, who would gladly take your paper, and read it with the greatest interest and benefit, if they knew its value. That Western farmers need a home journal, one they can call their own, one they can rely upon for advice and information, no one can doubt.— That they have such a journal in the *Valley Farmer* is universally admitted. As a new volume is now about to begin, now is the time to urge our neighbors to club in with us for it.— Let each farmer send from one to ten new names and I will guarantee that the Editors will labor for our interests as they have never before. The larger the patronage of any paper, the better the proprietor will make it, because the more means he will have to do it with. I for one am determined to form a large club for it, and if each subscriber will do the same I am satisfied much will be done to add to the advancement of progressive agriculture in the West.

We have a cause to advocate, we have a glorious profession to maintain—a profession whose members should be respected, educated and honored. I say honored, for how few farmers are honored. If an office of honor or profit is to be offered, does the lawyer or farmer have it? The lawyer in nine cases out of ten. Is this just? Let farmers be heard, let their rights be regarded—their profession respected and they will make no complaints—but until this is done they will complain and loudly complain, till redress is given.

But we are taunted with the slang that we are not educated, that we are not qualified to receive more honor or respect than we do. It is to be regretted that all farmers have not had the blessings of a good education, but in every community are to be found honorable, high-minded, educated farmers, who would adorn any position that might be tendered them. And we believe the time is not far distant, when a great majority of the farmers will be of this class. Farmers are now doing more to give to their children the blessings of education than they have ever done before, and it is by educating the rising generation that most good is to be effected. Even by the reading of such a work as yours, Messrs Editors, are farmers' sons benefitted and enlightened. I would not be without your valuable journal, for twenty times its cost, for the benefit it confers upon my own sons. The truths you publish sink deep into their minds, and they think, as well as work, and discuss the various modes of cultivation pursued on the farm, like old farmers.

I am glad to see you urging on the cause of Agricultural Education. I hope you will continue to do so until we shall have established in every Western State a Farmer's College and experimental farm—where labor will be still better educated, and farmers qualified for the noble position to which they are entitled.

Several of the States have already established them and the very best results have attended them.

We feel that we have no journal but yours to rely upon, to support our cause, to advocate our interests and to it will we cling, so long as it proves faithful to us. It has done so in the past—we feel confident it will in the future.— Brother farmers, let us cordially sustain, and earnestly labor to extend the influence of *our own* journal.

Camillus.

St Charles Co, Mo.

THE ORANGE STUMP MACHINE.

The above Cut gives an imperfect side-view of my IMPROVED STUMP EXTRACTOR. I am free to say that I wish this Machine brought into general use, because I need some compensation for the pains I have taken to bring it to its present state of perfection, and because it is desperately needed,—for much beautiful land in many States of the Union, is defaced by odious stumps. This Machine has no rival; its power is very great: its action very rapid, and hence, it may be made to hurl an acre of stumps from their dominion in a very short time.

Have you a forest you wished felled, that you may bring the soil into grass lands and orchards? Place this Machine beside it, and you can move roots, trunks and all if you choose.

Have you lands near villages deformed by these eye-sores, which you wish to turn into house-lots and gardens? Get this Machine, and you need not wait a half a century for the elements you need to do your work.

Do you build roads, and encounter stumps on routes? Get this Machine. It will often do in ten minutes what ten men will hardly do in ten hours. Its utility is not confined to moving stumps simply; it may be applied to massive rocks and buildings to great advantage and is among the best inventions for such purposes. The Machine secured to one anchor stump, in a central point, may turn upon it without change till a whole acre is cleared. Its average weight is about one thousand pounds. One horse can draw and work it. One man can load or unload it; and one man, if need be, unaided by others, can do with it a fair and satisfactory business; but three are better than one.

I manufacture these Machines at Orange, Mass., where I hold myself ready to furnish them, when ordered from any part of the country. The prices will conform to the size, extent of chain, and weight of iron. Rock Machine $125; Stump Machine, from $150 to $200. I should add however, that the Machine is simple in structure, and, with the Model I furnish, may be manufactured by any good and intelligent blacksmith.

ITS POWER.

The power varies according to dimensions. Suppose a Machine to have a lever 18 feet long, the anchor loop or fulcrum to be 14 feet from the end upon which the power is applied, the first purchase-loop to be 6 inches from the fulcrum; this will give you 28 times the amount of power applied at the end of the lever. Suppose your team to draw 2 tons, you have an actual purchase on the stump of twice 28, or 56 tons, and more in the same proportion as you extend the lever.

Suppose in combination with the lever, you raise shears 12 feet high, and the foot of the shears placed 2 feet from the stump; in this case, you have an amount of power 168 times greater than that applied at the end of the lever. Suppose your team to draw 2 tons, you have an actual purchase on the stump of 336 tons! Sufficient to hurl out well nigh any monster!

When the power of the shears has become exhausted, if you apply the chain and pulleys, you double the power of the lever, which gives 56 times the amount of power applied to the end of the lever. That is, suppose 2 tons purchase by the team, you obtain 112 tons; this is sufficient when the stump is once moved from its bed by the greater power, to perfect the work.

The shears should be placed near to the stump to get the greatest power, and they exert the greatest, when, rising, they reach exactly the perpendicular position. A large portion of all work may be done without their aid.

A strong horse will answer most purposes, though oxen are preferable. One man can work this Machine slowly, but it requires two or three to work it rapidly. A little patience and practice will enable almost any one to work it in a short time. W. W. Willis.

Lieut. Governor Brown, in the N. E. Farmer, thus speaks of it:

Among the visits made by us during the present month to the houses of farmers in various parts of this State, and New Hampshire, was one to the town of Orange, Mass., to witness the operation of the eighth wonder of the world, the PATENT STUMP PULLER, owned and operated by Mr. W. W. Willis, of that town. Notice of the trial had been given, so that persons assembled from the adjoining towns, and a few had come from remote distances.

At ten o'clock the hook of a stout chain was placed under a moderately-sized stump, and it

was turned out with as much apparent ease as though it had been a mere log with no attachment to the ground. Other stumps of still larger size, and more extensive roots were taken out, and all with certainty, and without the slightest confusion, and the time occupied in moving each one after the chain was applied, not exceeding ten minutes.

At length the visitors having multiplied to quite a crowd, a larger chain was attached, and an enormous stump, the growth, perhaps, of centuries was selected. With a small half circular spade, room was made under one of the roots and a stout hook attached; the chain passing from the hook up over the end of the shears, as represented in the engraving above. Nearly the whole surface of the ground about the stump was covered with the stumps of later growth of young pines, whose roots penetrated the soil, and mingled with those of the ancient progenitor. The stump itself was between two and three feet in diameter, and sound, as were its roots.

A pair of stout oxen were then hitched to the lever, and driven forward, as represented by the cut. When they had advanced some three or four rods, the chain was taken up and they were turned back without unhitching, the roots in the meantime cracking and making a noise like a pistol exploded under water. The ground gradually rose about the stump, and in five minutes its gnarly roots which had securely lain there for ages, were brought to light! At the expiration of ten minutes the old hero was fairly turned over, and the roots on the upper side pointing to the heavens! Upon actual measurement, we found the roots extending something more than 16 feet on each side of the stump.

A gentlemen from Valparaiso, who accompanied us, and who is entrusted by the Chilian government with funds to purchase agricultural implements, after witnessing the exhibition, at once ordered three of the Machines to be sent to his country.

The experiment was one of the most astonishing exhibitions of Mechanical power that we ever witnessed. The Machine is exceedingly simple, and not liable to get out of repair.

W. W. Willis Orange, Mass., is proprietor of this Machine; Clark, Plant & Norris of St. Louis, are Agents we believe.

A NEW VEGETABLE OIL.

There are a great variety of vegetable seeds and nuts from which oil is made. In Europe the manufacture of vegetable oils, except from linseed, is carried on to a much greater extent than with us. Recently we see it stated that the French are procuring excellent oil from an American product, cultivated very extensively in the South Western States. We allude to the Pea-nut.

In describing the process, it is said the shell is not removed, but is crushed with the kernel. In the process of extracting the oil, the nuts are subjected to several operations. They are first passed through a series of crushing cylinders and then submitted to the action of stones similar to the mode employed in preparing linseed for pressing. The meal, when thus prepared is placed in hair cloth sacks, and submitted to powerful hydraulic pressing. The oil flows off into buckets. In the center of the bucket is a tube nearly to the top of the rim and this tube passes through the bottom of the bucket, and connects by a pipe to the cask. Over the top of this tube flows the lighter and purer portion of the oil, while the heavier refuse part remains behind in the bucket. The oil goes through no process of clarification, it remains in the cask from six to ten days, and at the end of this time it has become clear. The cake is then crushed and submitted to a second and third pressure. The oil resulting from the first pressing is used for eating; that from the second for burning; and that from the third for making soap.

Whether this use of the pea nut will prove a profitable one or not we have no means of determining short of actual demonstration. The French are great for new discoveries. But as this nut is rich in oil we see no reason why the manufacture might not prove valuable. For the table we should expect a more palatable and perhaps as healthy an oil as from the olive, which by the way we are now as likely to be supplied with a less healthy substitute as we are with the genuine article. The subject may be worth looking into by the cultivators of this nut.

[For the Valley Farmer.]

A VAULT FOR MAKING BUTTER.

Make an excavation 12 1-2 feet deep, 8 by 16 feet. In front, directly south, open an entrance 3 feet wide, and about 15 feet in length, giving steps of 10 inches rise and the same in tread. The sun, at noon-day, will shine to the bottom, and keep them and the vault perfectly dry.—Such vaults have been in use in Pennsylvania for more than twenty years past, in the same latitude as this. That which I made for my own use in this State, was walled up with stone and arched over about 6 1-2 feet from the surface of the brick pavement to the crown of the arch, leaving a depth of earth over the same of about 4 feet. The stairway was overlaid with slabs of stone, and the steps were stone, so that there was no wood work about it except the double outside doors, which were hung in stone cheeks. The inside door should be covered with slats or woven wire to admit the air, and the outside one with boards to exclude rain and snow. Long experience has demonstrated the great utility of such a vault for both winter

and summer use. In this region of country I have no doubt that a vault of this description can be made at a very small expense. Made securely dry, it would, I think, require no walling. By removing the soil down to the clay, for, say two feet from the margin of the excavation and then well puddled with clay, the water could be effectually excluded. Both the vault and the gangway could be covered with split oak and overlaid with clay, top-dressed with the soil which had been removed, so as to show an even surface beautifully covered with grass.

Butter of the best quality is made in these vaults, and the full amount of cream is attained at the degree of temperature at this depth. The quality and also the quantity of butter obtained here, so far as a year's residence have afforded opportunity of discovering, prompts me to offer these remarks to the readers of your very valuable journal. I had a flue in the back end of my vault, with an external screen of perforated sheet iron; whether this is of much importance I know not. These vaults are preferred in Pennsylvania, to the very best spring houses. They can be placed in the most convenient situation, and in the winter they are far preferable, and in summer, are as good, if not better.

Yours, &c. Geo. Sheets.

Sharpsburg, Mo.

OSAGE ORANGE HEDGE.

F. R. G., Norristown, Ark., wishes information respecting the Osage Orange for hedges—whether it is best to plant the seeds in the hedge row where the plants are to stand, or whether the plants should first be grown in a nursery and then set in the hedge. He also enquires whether the hedge may be set in open prairie without protection, where but little stock runs at large?

We have before answered the question with regard to planting the seeds where the hedge is to stand, but will again give our views upon that subject.

The plants should first be grown in nursery—planting the seed about corn-planting time, in well prepared soil, in drills far enough apart to admit of good cultivation. The seeds should first be soaked, or what is better for inexperienced planters, they may be put into small sacks and well wet or soaked for twenty-four hours, and then buried for two or three weeks before the time of planting. They should be examined occasionally and planted as soon as germination takes place. One season's good cultivation will produce plants from one to two and a half feet high—when they are ready for the hedge row. The row should be well broken up in the fall or early summer if in fresh prairie, and allowed to remain till spring, when it should be again plowed and well harrowed. This preparation should extend for a width of at least ten feet. The plants should then be taken up with care, the tops shortened and the roots reduced to ten or twelve inches in length, and all assorted into parcels of uniform sizes, setting each size together. Following this plan and cultivating the hedge-row to the full width as here given, every plant will grow with nearly equal vigor, producing a handsome, uniform hedge; while on the contrary, if the seeds are planted in the row where the plants are to stand, they will vary materially as to size and distance apart, and this want of uniformity will increase annually, the stronger plants gaining the ascendency, and the weaker ones being overgrown, will finally dwindle and fail to make a permanent hedge.

In regard to the second question, we will remark that the young plants would be injured if trampled upon by stock—though if there was a wide range for cattle and but few of them at large, they would not be likely to do great injury to a young hedge while feed was abundant and the grass and weeds in the hedge-row kept fully subdued.

The seeds may be had in our cities at prices from 50 cents to $1 per quart, according to the quantity required.

CHINESE SUGAR CANE.

W. H. G. of Milan, Mo., states that he has readily succeeded in making a good article of syrup from the new plant, but fails in making sugar, and asks for light on the subject.

This we think will be found a difficult task and one not readily overcome by farmers in general on a small scale. Sugar refiners of long years of experience have experimented with the view to granulate the syrup, without success.—Mr. Lovering of Philadephia is the only person, so far as we have learned who has been perfectly successful in this branch of the manufacture, and the account of his experience is given in such a form as to render it of little or no practical value to any but those familiar with sugar boiling.

The experience of another season must be had before we can give any information that can be employed with profit to any one in sugar making. We hope the nature of the sugar cane will admit of the manufacture of a good article of sugar, by a simple process, after the numerous experiments that will be made this year. But we doubt whether it will ever be found profitable in home manufacture.

Keeping Sweet Potatoes for Seed.

In answer to an inquiry on the subject of keeping sweet potatoes through the winter, we will state that various means are employed.—The primitive method was to open a cavity under the kitchen hearth, place the potatoes in it, where a moderate degree of heat and dryness could be maintained. Any means that will secure these ends is all that is requisite. The most common method is to pack the potatoes in boxes, holding a few bushels each, and then filling the interstices with dry dust from the road, secured at a favorable time in the summer or fall. The boxes should be placed in a *dry, warm* cellar, where a uniform temperature of about 45 degrees is maintained.

The President of the Kentucky Horticultural Society, in Jefferson County, keeps his potatoes in great perfection through the winter, and even through the following summer, in a deep cellar or pit, divided into two stories; the lower one is for potatoes, which are placed on shelves around the room. Here the earth is quite dry, and at the depth of fifteen feet or more, the temperature is very uniform. In severe cold weather, a small fire is sometimes made in a stove.—Potatoes kept in this house are as sound in the spring as when first dug.

[Written for the Valley Farmer.]

An Agricultural College in Missouri.

Messrs. Editors—I have long regarded the establishment and proper endowment of an agricultural college, of the very greatest importance to the farmer. His profession is based upon a Science as mysterious and profound as that of any of the Sciences, and whilst we have Colleges handsomely endowed, in which are taught all of the Sciences pertaining to many of the callings and departments of life, strange to say that the calling of the Agriculturist which is justly regarded, and admitted to be the most important of them all, has been wholly overlooked and utterly neglected until it has ceased to be regarded as a Science, even by many of its own numbers, and is looked upon as a mere menial service, requiring no intelligence further than is necessary to make the individual set the wedge and hold the plow handles. Indeed, as a class, we are so very ignorant of the mysteries of our profession and the sciences on which it is based, that light upon the subject is regarded with scorn and contempt, and he that would avail himself of the benefits of science to aid him in his calling is derided as a "Book Farmer" a "visionary" and incapable of managing his own affairs. What do we, as a class of farmers, know about Agricultural Chemistry? I presume there is not (upon an average) one farmer in five thousand that knows anything about the substances of which his soil is composed, which he daily tills, and that we are alike ignorant of the properties of our plants and the substances upon which they feed, and being ignorant of the qualities and properties of our soil and our plants, we are equally ignorant as to what would be the best rotation of crops to be pursued, and should we desire to ascertain their properties and qualities, we do not possess the scientific knowledge necessary to enable us to conduct the investigation. It is true that we have learned some things, by observation and experience. We know that hemp will not grow after wheat; the cause we cannot tell. Whether the wheat crop has fed upon and exhausted some property of the soil necessary to the growth of the hemp, or whether the wheat crop has imparted some property to the soil, pernicious to the growth of the hemp, are alike unknown to us. Were we able to analyze our soils, and our plants, and ascertain their properties and qualities, we could readily adapt one to the other, and be enabled to pursue such a rotation of crops as would increase the fertility of our soil, while we would increase the amount of the products of the soil. But as it is we are ignorant of nearly everything upon which agriculture is based—ignorant of many of its plainest and most important laws—ignorant of many of the most powerful influences which are constantly operating, assisting or preventing our success; and consequently cannot take advantage of them. And are we thus ever to remain ignorant of our profession? When there has been ample provisions made for the wants of other professions, shall there be no provision made for our wants? Shall agriculturists longer be denied an Agricultural College in which their sons may be made acquainted with their profession, and by which, after their return from college, they may be enabled to pursue their calling with pleasure and profit to themselves? Let us press this subject upon the attention of our Legislature. Let us at least do our duty to ourselves and if they prove recreant in their duty to us, let us see to it, for the future, that we will have the services of those who will willingly protect and promote our interests.

Respectfully, W. L. Irvine.

Irvine Valley, Mo., Nov. 25th, 1858.

Stock Raising Department.

DISEASE AMONG CATTLE.

We hear that the "Texas Fever" has appeared among some of the cattle in our county, and that quite a number of them have died from it. We expected some such result from the droves of Texas cattle that passed through this region in the spring. The fact is, our farmers ought, in future, to do as they did in Cooper: refuse to let the miserable, scrawny Mexican cattle come among us. In this way the cattle can be kept clear of disease, but not otherwise. —*Lexington*, (*Mo.*) *Expositor.*

A number of valuable cows have died suddenly in this neighborhood during the past week. The disease is supposed to be bloody murrain. Should the disease be "Texas fever," the best remedy we know of, is to bore the horns with a large spike gimlet, low down, and keep the holes open for the discharge of matter from the head. All cattle, with the Texas or Mexican fever, have the hollow horn.—*Boonville Obs.*

Domestic animals are subject to various diseases of like character to those to which the human family are liable, and require similar treatment, but while our country is supplied with a superabundance of "M. Ds." devoted to the *genus homo*, scarcely an intelligent, regularly educated Veterinary practitioner is to be met with over an extent of farming territory of hundreds of miles, sustaining domestic animals to the value of millions of dollars, and when an epidemic like the hog cholera, or Texas fever, breaks out, no one is found qualified to determine the cause of the disease, or to suggest a remedy. In horned cattle, in this country, most diseases are resolved into one, and this is termed *Horn-ail*, or *Hollow-horn*, and at once the barbarous practice of boring the horns and injecting into the head of the suffering brute some powerful solution, is resorted to, which is only calculated to aggravate the sufferings of the animal and hurry the period of its death. In all the Standard Veterinary works, of which intelligent authors of England and France have furnished not a few, we have never met with any allusion to this imaginary disease.

The pathological conditions on which ignorant pretenders base their absurd theory of this disease, are the heat and coldness of the horns. These are the only symptoms by which all diseases are determined by this class of *doctors*. In nearly all diseases, whether of man or animals, the digestion and circulation are more or less affected, and cause an increased or decreased temperature of the surface of the body, and which will most readily be manifested in the horns, because their organization is inferior to other portions of the body. Whenever the general circulation is increased or impeded, from diseases of whatever character, it may at once be detected in the horns, though the location and origin of the disease may be in some remote part of the body.

Of the nature of the disease that has prevailed among the cattle of Texas and other Southern States, we are not familiar, but we feel quite sure that no benefit, but positive injury will result from boring the horns with a "large spike gimlet."

The same disease which is here termed the Texas fever, is called in South Carolina and Georgia, the *black tongue*.

While such immense losses annually befall the farmers of our country from the diseases of domestic animals, we would earnestly advise the establishment of a suitable number of Veterinary Colleges, in proper localities, and that a portion of the young men who are now crowding the other 'professions" turn their attention to this department of medical science. The capital invested in farm animals in the United States amounts to many millions of dollars, and we can see no reason why the profession of treating this class of subjects is not equally honorable with that of any others practiced in the country. It is only by an improper estimate of things that it is regarded otherwise.

The establishment of these schools or colleges, we regard as proper subjects for the consideration and action of the various State Agricultural Societies, and we should be glad to see some of them moving in the matter.

TO CURE A HAM.

[This and the following receipt we are enabled to give through the kindness of a lady who has tested them and proved their value. That for curing ham, she had in constant use for many years, and although involving some more trouble than is necessary in other receipts, the excellence of the result is thought more than a compensation; and from personal trial of ham thus cured, we must add our highest commendation to hers. The receipt for curing beef she has tried but one winter, when it was found such a success that the trial is to be conducted this fall on a larger scale.]—*Country Gent.*

One pound and a half of salt, one quarter of a pound of salpetre, and one ounce of black pepper.

Mix these well together, and rub the ham WELL; cover it with what remains; let it lie six days without moving; then add one pound of molasses after which turn the ham every day and sprinkle it with the pickle for five weeks.

Then dry it well, and hang it up in a temperate heat to dry thoroughly.

BRINE FOR BEEF.

For 100 pounds of beef take
6 gallons of water,
9 pounds of salt, half fine and half coarse,
3 pounds of brown sugar,
1 quart of molasses,
3 ounces of saltpetre,
1 ounce potash.

Put the above ingredients into a kettle and boil it, taking off the scum. As soon as the scum ceases to rise take it off, and when cold, pour it in the barrel on the beef. The beef should be rubbed with fine salt before packing in the barrel.

CIRCULAR TO STOCK BREEDERS.

BLACK ROCK, N. Y., *September*, 1858.

DEAR SIR :—The approbation with which the previous volumes of the American Herd-Book have been received by the Short Horn Breeders of this country, together with the large contributions of pedigrees to their pages, and the solicitations of many breeders to have a fourth volume in preparation, have induced me to give this notice, that sufficient time may be given for the full examination which is required by every Short Horn Breeder to properly arrange their pedigrees Since the compilation of the last volume, hundreds of young animals have been produced, and new importations made from abroad; and by the time the next volume can be ready for the press, a further natural increase to our existing herds will be added. I therefore give you this notice, that in case you choose to record your pedigrees, you can have ample time to do so. I ask your attention to the following particulars :

1st.—All pedigrees must be sent in previous to the *first day of January*, 1859, to allow me time to compile them, and issue the book by May 1st, 1859.

2d.—Every pedigree must be made out at *full length*, after the manner of those in the volumes of the American Herd Book, as I cannot encounter the labor and responsibility of making out full pedigrees from short notes, hints and memorandums. The imperfect conditon of many private records required me to do that labor for my previous volumes, which it is now unnecessary to repeat, with such extensive authorities as those volumes before you will afford. I can not, therefore accept such imperfect papers, only in cases where your animals or their ancestors have not been previously recorded, either in the English or American Herd-books. Another reason for this is, that every breeder ought to be supposed to understand the lineage of his stock better than a stranger, and consequently he can give their pedigrees with greater accuracy.

3d —*Let every individual pedigree be complete in itself*, like those in the published Herd Books. State by whom the animal was bred (if you wish that fact known ;) the date (by month and year) of its birth; the name and Post Office, (County and State;) residence of its present owner; its sex, (this may merely say "Bull" or "Cow," in parentheses, by the side of the animal's name ;) the color, whether white, red, red and white, red roan, light roan or roan, simply, without qualification. In roans where white is the prevailing color, they are *light* roans ; where red prevails over the white, they are red roans. By referring to the past volumes of the Herd-book, you cannot mistake the mode of description, or the tabling the produce of the cows. Do not send me printed pedigrees from newspapers, handbills, or catalogues, &c., unless thay are in Herd-book form, and complete; nor when they are printed on both sides of the paper, as, if so, they must be copied by me for the printers. The names of bulls occurring as sires in the pedigrees, may be referred to by their numbers, when recorded in the Herd-books, either English or American. When such bulls are not recorded, let their pedigrees be written and referred to *distinctly* under the pedigree to which he is a party. Any unrecorded and unnumbered bull referred to in a pedigree must also be numbered and recorded to properly elucidate such pedigree, and a charge of fifty cents will be made for such a bull or bulls. In cases where uncommon labor is necessary for me to find out the pedigree an additional charge of fifty cents to a dollar each will be made, of which the owner of the animal will be notified at the time.

4th.—Every animal presented for record must be *well-bred*; and where evidence of the fact can not be traced to animals recorded in an existing Herd-book, *documentary* evidence must be furnished to sustain the fact that they are *true* Short Horns, and are descended from well authenticated Herd-book animals.

5th.—Fifty cents will be charged for each animal recorded in a distinct pedigree by name excepting animals named in the tables of produce of recorded cows. The record fee, in current money at your place, to be remitted when the pedigrees are sent to me. In all cases where a pedigree, for insufficiency, can not be recorded, such pedigree, will be sent back, if requested, and the fee returned.

6th.—In making out your pedigrees, write only on one side of the paper. Write legibly and with perfect distinctness, all proper names, as without such writing many names can only be guessed at, and important mistakes may occur. Let your lines be quite half an inch apart and between each pedigree let there be a space of at least two inches of blank paper. When pedigrees are written on both sides of the paper, they will be immediately returned, as one side of them must, in all cases be copied in order to print them.

7th.—If any extraordinary qualities of milking, in accurate weights or measures, and times, belong to your cows, or of dead weights of carcasses in slaughtered recorded animals, have been made, they may be noticed; as we claim that the Short Horns are the greatest milkers, and the heaviest beef, of any neat cattle whatever, as such instances carry proof of these facts to the public.

8th.—If there have been any errors or omissions in the pedigrees of your animals already

recorded, by my fault, please correct them and send them to me, and I will rectify them in proper order in the fourth volume, by name and reference, without charge.

9th.—I will print any number of well drawn, accurate portraits of animals, for the fourth volume, at five dollars each, for the whole edition of the book; the portraits and cuts to be furnished by the owners. This will be done on the best fine tinted paper. I can not print portraits without charge, as the expense is too heavy an outlay for me, and the main benefit accrues to the proprietors of such animals. In this relation I am authorized, by Mr. John R. Page, a good artist, whose address is Senett, Cayuga Co., N. Y., to state that he will proceed to take such portraits, whenever a sufficient number can be furnished to justify it, and that he will superintend the engravings of them by competent workmen. Any portraits in the second and third volumes are samples of his execution. All persons who contemplate giving portraits of their cattle, should lose no time in obtaining them at once, that there may be ample time to have them properly engraved.

10th.—The price of the book to contributors and subscribers, will be the same as last—five dollars a copy—payable on ordering it for delivery. The work to be the same in style and material as the third volume.

11th.—If you have sold unrecorded animals to any breeders whose names are not in the third volume, I will thank you to send me their names, that I may send them a copy of this circular, as it is of advantage to you to let animals of your breeding, now in other hands, be recorded and known to the public.

34th.—I suggest that even in cases where you record by name the produce of your cows, it is still better to give all such produce a distinct record of their own. They become thus more conspicuous, as such produce merely recorded with the cow is not much looked after by inquirers,—the chief advantage in the produce tables being to show that the cow, whose progeny is so recorded, is a successful breeder. This separate record will add an item to the expense. but it is a trifle compared with the value of an animal worth from one hundred to five hundred or a thousand dollars. Address me at Black Rock, N. Y.

Respectfully Yours,

LEWIS F. ALLEN,

Editor American Herd Book.

MILCH COWS.

Messrs. Editors.—It is not a spirit of fault-finding which prompts me to write. I am well persuaded that you are laboring for the common good, and the interest of the farmer more particularly. As far back as fifteen years ago, I noticed in your good city a practice which has anything but a good tendency, and on my recent visit to your sanctum and not over fifty paces therefrom, I saw the same thing practiced.—Much has been said about the sad effects of swill milk and adulterated milk &c., and the pernicious practice I here refer to has an equally serious result. I refer, namely, to the manner in which milch cows are brought to your market, and I feel assured that you will endorse my motion to abolish said wrong.

Venders of milch cows generally purchase such as are fresh and have a calf at foot, next the muzzle of the calf is tied strongly together, so that it can scarcely breathe, the cow then goes unmilked for eight and forty hours, or more, to judge from appearance of calf &c., the udder is thus distended, and persons suffer themselves to be imposed upon by so bare-faced a fraud, believing said cow to be an extraordinary milker. It is obvious that both cow and calf are seriously injured by this practice; the milk from said cow is not fit for table use for at least ten days thereafter and I should not desire to partake of the veal either; for most always when a cow is purchased for the city or by milkmen, the calf goes to the shambles.—Milkmen and citizens ought not to countenance this practice, and ought to be willing to take the condition of the calf as an index of the milking qualities of the cow. Seeing this thing has been brought to your notice Messrs. Editors, I trust you will do the citizen and the farmer alike the service of calling attention to it, and if this thing is well understood, it must soon cease.

Old Firkin.

Oregon, Illinois.

Milk Wasting from the Teats of Cows.

Your correspondent, P. McC., inquires for a remedy. Let him get from the druggists a small quantity of Collodion, or "liquid cuticle," and when the cow has been milked apply it to the end of the teats. It instantly will form a thin and tough skin, close the orifice and prevent the emission of the milk. At milking time the false skin can be broken through, and the cow milked and the collodion again applied: In a week or ten days there will be no necessity for further application, as the defect will be cured.—*Country Gentleman.*

Changing Pastures.

A milk dairyman near Boston has his pasturing in four lots, and enumerates the following among other advantages, in the division: More stock can be kept, by one-eight on a given number of acres, by keeping on each, one week at a time; when the fourth is turned into, the grass is fresh and large, and so of each field through the season; the cattle are quiet and peaceable, much more so than when kept uniformly in one lot. His experience makes him a believer in the old saying—"a change of pastures makes fat calves."—*Country Gent.*

VETERINARY SCIENCE.

Time was when every science was supposed to be occult—almost a hidden mystery to the mass of mankind. Among these almost inscrutable things was numbered the theory and practice of medicine, whether it related to the human or animal system. But now, many are beginning to understand that scientific knowledge is often as easily understood as many of the most practical things in life. Especially is this true of much that pertains to the laws of health among men and animals. It is necessary for every man to study the conditions of his own health and the health of his own domestic animals. With proper attention he may soon learn what promotes and what endangers health. It should be the business of farmers to study the constitutions of their domestic animals, the diseases to which they are most liable, the best modes of treatment, and the best means of preserving their health. There is no mystery about this knowledge. Attention to the general subject is wanted. Let the rules of health be observed; let domestic animals be well cared for, well-fed; preserved from great extremes of heat and cold; kept in the quiet enjoyment of their homes; those that are worked, treated with consideration and kindness; let them never be abused, dogged, whipped, beat, stoned, overheated, or otherwise harmed. Nothing is more necessary to health than perfect comfort.

If farmers will study the health and diseases of their domestic animals they will increase their stock of valuable information—increase their profits, and increase their own happiness.

National Exhibition of Horses at Springfield, Mass.—The third National Exhibition of Horses closed on the 18th of October. It was a fine exhibition of 361 horses. Great interest was manifested in it; and it no doubt is helping to awaken a real interest in the improvement of horses. The great horse State, Vermont, was well represented in 112 horses, although her own State Fair was held at the same time which drew a large show of her best horses.—Vermont received one State prize banner, and New York the other. The Morgan was the prevailing blood.

Let more and more attention be paid to breeding and rearing good horses. The horse is man's friend and companion—the noblest animal that lives—and under the right care and culture will improve vastly yet. Let the horse always receive the best care of his master.

Milch Cows and Dairy Farming; Comprising the Breeds, Breeding and Management, in Health and Disease, of Dairy and other Stock; the Selection of Milch Cows, with a full explanation of Guenon's Method; The Culture of Forage Plants, and the production of Milk and Cheese: Embodying the most recent Improvements, and adapted to Farming in the United States and the British Provinces; With a Treatise upon the Dairy Husbandry of Holland. To which is added Horsall's System of Dairy Management.

This work is by Charles L. Flint, Secretary of the Massachusetts Board of Agriculture, and author of a Treatise on Grasses and Forage Plants. We know of no two works connected with American Agriculture of greater practical value than these, and none is more needed than the one under present notice. It will be found a most valuable work among farmers, embracing a fund of information about the selection of cows, the proper method of treating them; how to make butter and cheese, as well as valuable information on grasses, &c. It embraces 400 pages, with numerous well executed engravings. The whole upon excellent paper, and is sold at the cheap rate of $1,25. It is published by Rickey, Mallory & Co., Cincinnati, also by A. O. Moore, Agricultural Book Publisher, New York, and sent by mail free of postage.

Curing Hams.—As the time is at hand for preparing these useful stores of rich and savory food, a few words will not be out of place in regard to them. The legs of hogs short in the hock, are the best for hams, and should be chosen in preference to lanky hogs. They may be salted by immersion in a clean pickle, containing a little sugar and saltpetre dissolved, or they may be salted by rubbing ground solar evaporated salt over them, turning them every day, and giving them a good rubbing. A little sugar and ground black pepper added to the salt will much improve the flavor of the meat. It requires about a month to salt hams by the wet process, and three weeks by the dry system. At the end of this period, they should be hung up for a few days to drip, and then they are ready for smoking. Much depends on the kind of material used for smoking them, so as to secure a sweet flavor. Whatever fuel is used for this purpose, one condition should never be overlooked: it should be perfectly dry, or else it will be liable to impart a bitter taste to the meat. Dry corn cobs and some dry, sweet hay, are superior to all other materials we have seen employed for smoking beef and hams. Mutton hams may be prepared in the same manner as those of pork, and they are exceedingly palatable when the meat is good, and care exercised to smoke them slowly.

The Poultry Yard.

PREPARING AND PACKING POULTRY FOR MARKET.

Without recourse to statistics few persons are aware of the immense quantity of poultry now consumed in our large cities, for instance, New York, Boston, Philadephia, and others.—With the present railroad facilities, the largest portion of this is brought from distant States, much of it from the far West. In New York, the largest portion of this foreign trade is confined to a small number of wholesale dealers.—It has been the custom with some of these, for a few years past, to publish directions, giving the best method of preparing fowls for market. Where such a large amount is involved, it is important that every one interested should have the benefit of these instructions. The following is the substance of one of these circulars :

Fowls that are to be killed should not be fed for twenty-four hours previous to killing.

To give the fowls a better appearance, it is advised to kill them by opening the veins of the neck, rather than cutting off the head, which leaves the neck exposed by the contraction of the skin.

Poultry that "are dry picked," that is, without the use of hot water, look better than when scalded ; this is an easy matter, if done immediately after killing.

For scalding poultry, the water should be near to the boiling point, but not actually boiling. The fowls should then be held by the legs, and immersed, by passing them up and down three times, aiding the water in penetrating the feathers and acting on the skin. Continue to hold the bird by the legs with one hand, while plucking the feathers with the other, without a moment's delay after taking out. If skilfully handled in this way, the feathers and pin-feathers may all be removed without breaking the skin. A torn or broken skin greatly injures the appearance, and the price will be low in proportion.

After the feathers are removed, the head may be taken off, and the skin should then be drawn over the neck bone, and tied. The intestines and crop should not be drawn.

The appearance of poultry is improved by another process called "plumping." This is done by dipping the fowl about two seconds into water that is nearly or quite boiling hot, and then at once into cold water about the same length of time. Some use only the hot without the cold water.

If the poultry is to be packed for a distant market, it should be entirely cold, but not frozen, before being packed, as it will sell better if it reaches market sound without freezing.

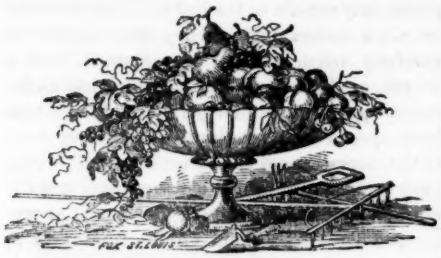
In packing, when practicable, use clean, hand-threshed, rye straw. If this cannot be had, wheat or oat straw will answer, but be sure that it is clean and free from dust, of any kind. Place a layer of straw at the bottom, then alternate layers of poultry and straw, taking care to stow snugly backs upwards, legs under the body, filling vacancies with straw, and fitting the package so that the cover will draw down very snugly upon the contents, so as to prevent shifting on the way. Canada poultry generally reach market late in the season, say in the month of February. Much of it is well fattened and of good quality, but it is generally dressed and packed in a slovenly manner, the crops being full of food, (peas and oats) the wing and tail feathers on &c., and it sells low in proportion to its value.

Fattening Turkeys.

The alimentary properties of charcoal are very great ; indeed it has been asserted that domestic fowls may fatten on it without any other food, and that, too, in a shorter time than on the most nutritious grains. In an experiment made to test the value of the article, four turkeys were taken and confined in a pen, and fed on meal, boiled potatoes and oats. Four others of the same brood were also taken and confined at the same time in another pen, and fed daily on the same articles, but with one pint of finely pulverized charcoal mixed with their meal and potatoes; they had also a plentiful supply of broken charcoal in their pen. The eight were killed on the same day, and there was a difference of one and a half pounds each in favor of the fowls which were supplied with the charcoal, they being much the fatter and the meat greatly superior in point of tenderness and flavor.

The Dorking Fowl.

John Giles, a well known poultry breeder of Woodstock, Conn., expresses the following opinion : "After forty odd year's experience with the gallinaceous tribes, I say that, in my humble opinion, no breed of fowls will compare with the true Dorking as good mothers, sitters, and layers, giving eggs in abundance, chickens easily reared, and which come to perfection sooner than any other poultry. The flesh is of a delicate white, fine in the grain, and delicious of flavor."



Horticultural Department.

THE APPLE TREE BORER.

R. H. C., Waverly, Mo., asks a number of questions on a variety of subjects, all of which we will attempt to answer in our present number, each in its appropriate department. And first, a remedy for the apple tree borer.

If our correspondent will turn to the Valley Farmer for 1857, page 25, he will there find the whole subject fully discussed and illustrations of two varieties or species of apple tree borers, and some of the errors of certain distinguished entomologists pointed out in regard to the only species we have seen in the West. But as our correspondent has only recently become a subscriber to the Valley Farmer, we will reply to his queries.

The true apple tree borer, *saperda bivittata*, is found destructive to the apple, quince and other trees, throughout the northern and eastern States. The perfect insect comes forth in the month of June, and during this month and July deposits its eggs near the ground, only on sound and healthy trees. The larvæ hatched therefrom are fleshy, white grubs, round, and tapering a little from the first ring to the end of the body. The head is small, horny and brown; the first ring is much larger than the others, the next two are very short, and, with the first, are covered with white punctures and very minute hairs; they have no appearance of legs. While young, these insects remain for a time in the bark or near the surface of the tree, and if looked after soon after they commence the work of destruction, say in August, they might be discovered and destroyed, by the removal of the outer surface of the bark where their places are marked by small, black spots. Or if the stems of the trees were rubbed with strong soap slightly diluted, about the time the eggs are laid, the application would prove destructive to them and the young insects. If the trees have been neglected until the worms have made their way into the heart-wood, it is difficult to exterminate them. We have, however, been partially successful in this, by inserting a flexible wire into the hole, and thus killing them. A thorough rubbing with the soap once or twice in the season, is the most effectual preventive, and the application will promote the health and growth of the tree in other respects.

As we have intimated above, we have never met with this insect in any but the northern and eastern sections of the United States. But we have another borer common throughout the West, quite distinct in its habits from the *bivittata*.

We presume the borer complained of by our correspondent, is the one known in the West.

The full grown borer is about three-quarters of an inch long, sometimes extending to a full inch; its body is flat and its forward joint is twice as broad as any other portion of its body; it is of a pale, yellow color, with a pair of sharp, highly polished, black jaws. It comes to maturity after eating into the trunk of the tree one season, while the former, according to Dr. Harris, requires two or three years. But the Western borer never attacks trees in a healthy state, but is found in recently planted trees, which have been subjected to improper handling and bruising, or injudicious pruning, or, in young trees, growing upon too moist soil, where the wood but imperfectly matures and is left liable to injury from excessive freezing and sudden thawing by the bright, morning sun. These circumstances produce a diseased state of the sap, which invites the moth, as any other diseased or putrid matters do the numerous insects that are only found in such substances. The effect of the frost and sun upon the trees, in this way, is generally visible upon the south-eastern side of the trunk, extending to the ground, and marked by the sap oozing out, leaving a dark, stained surface. It is under this bark that the worm is found. The only remedy we can recommend, is to plant trees upon well drained soil, and train the heads low, so that the branches shall be a protection to the stem, by breaking off the wind and the direct rays of the sun.

From what we have said, our correspondent will be able to judge which of the insects is at work in his trees.

Since writing the foregoing we have visited an extensive apple orchard, in Mercer Co., Ky., for the purpose of examining the trees, nearly every one of which have been affected by the

sun in the manner described above, and only in the diseased part did we find the borer had done injury. This orchard is about seven years old, and the injury was all produced at the same time, under a combination of circumstances most favorable to it, which occurred about three years since. These trees are headed too high and those most affected have received an inclining position from the prevailing winds,—(southwest.) The remedy now applied to younger orchards in that neighborhood, is to shield the stems of the trees from the influence of the sun, by a covering of straw or corn stalks, or by placing a board against the trees on the South side.

PLANTING SEEDS OF THE PEACH AND OTHER STONE FRUITS.

An inquiry is made by a correspondent in regard to the management of peach and cherry stones, and the proper mode of planting them, &c., remarking that a certain distinguished *Professor* recommends that peach pits, in order to insure their vegetation, should be planted point downwards; for he says: "Peach stones in falling from the trees, always bury themselves alike, point downwards, and this ought to be imitated. Broad end upwards the frost opens them, and the water enters," &c. Some men are wise above that which is written—the instruction given is sheer nonsense, and we wonder that men of common intelligence should give publicity to it. The Professor may be a tolerable judge of *super-phosphates*, but in tree planting he is not reliable. Not one peach in ten thousand in falling from the trees ever falls point downwards, to remain so until the seed vegetates. All that is necessary in planting peach, plum and cherry stones, is to keep them moist from the time the fruit is gathered until the season of planting arrives. To secure them in a moist state we have adopted various methods. About as good a plan as any, for peach stones, is to clean off a light, mellow spot of ground and spread the stones evenly over it, covering the entire surface with the seeds, then throw over the whole a covering of two inches of earth. Let them remain in this way through the fall and winter, and in the spring, the natural swelling of the kernel will burst the shell and vegetation immediately follows, and this is equally true whether they are frozen or not.—The peach is a native of a warm country, and heat and moisture in a proper soil are all that are necessary to insure germination. The young plants may remain in the bed until they are two or three inches high. They then should be carefully taken up and transplanted with a trowel, or the beds may be examined just as the stones open at an earlier period, and those that have opened may be planted in nursery rows. If the stones cannot be procured until after they have become dry, in this state we have usually placed them, barrels and all, into a pool of water and let them remain two or three days in soak, and then bed them out as above directed, but in this condition it frequently occurs that a portion of the seed will not vegetate until the following spring, on account of the hardness of the shell, from drying, which excludes the moisture necessary to swell the pit and open the shell.

The shells of plum, and particularly cherry stones, are so much thinner, that from exposure to the air a short time the seed becomes so dry that they frequently fail to vegetate altogether. It is therefore necessary to put them in preparation for planting immediately on removing them from the fruit. Small seeds, like the plum and cherry are best protected by mixing them with ten times their bulk of sand in boxes, and exposing them to the fall and winter rains, and in the spring as soon as the ground can be got in readiness for planting, they may be separated from the sand by a riddle and then planted in nursery rows. If well protected from drying at the beginning, they will be about as sure to grow as so many grains of corn.

Apple and pear seeds may be dried and afterwards grow, but these are better if never allowed to become entirely dry. For nursery purposes we have always cleaned out our own seed from the pomace, and taken care to do it immediately after it comes from the press, for unless the apples are ground and pressed in cold weather, the pomace will ferment in a few hours, producing such a heat as to destroy the vitality of the seed. We have frequently placed the seed in boxes of sand as soon as they are washed from the pomace, but treated in this way, they have often vegetated so early in the spring that the ground could not be put in suitable condition to plant. Spreading the seeds upon an upper floor, or in boxes one inch deep, and stirring them frequently will keep them perfectly safe, and at the same time not get too dry. As early as February they may be mixed with moist sand and exposed to the weather, when they will grow with great certainty at the time required.

Pear seeds may be treated in the same manner. The seeds can be separated from the sand with a riddle, at the proper time of planting.

[For the Valley Farmer.]

A FEW THOUGHTS ON GREENHOUSES.

"Who loves a garden, loves a greenhouse too,
Unconscious of a less propitious clime,
There blooms exotics beauty snug and warm.
While the winds whistle, and the snow descends,
The spicy myrtle with unwithered leaf
Shines there and flourishes."—COWPER.

In the days when Cowper so sweetly sung a greenhouse was a rare luxury, even in "Merrie England." Times have wrought changes fraught with improvement in every department of gardening and in none more than that of raising plants in an artificial atmosphere. The whole matter is much simplified both in regard to the construction of the building and the management of the plants it is intended to contain. A greenhouse to answer its purpose need not cost much, yet how great its influence during Ice-king's reign, as an appendage to the country homestead. Some do not think so, perhaps, but then they see little beauty in flowers of any kind. In our prairie homes, we have an abundance of flowers during summer, but as common property take little heed of them. In our gardens, besides the choicest of these, we have the cullings of the floral world so far as known, that will stand our winters. A step further, and the greenhouse will contain those of the temperate climes; still unsatisfied, and in the hothouse are the representatives of the tropics. Each have their peculiar characteristics. A noted one of the greenhouse is the smallness of the leaves as compared with those of the hothouse. These last are mostly so organized as to bear not the slighest touch of the ice king.

They are, even in their foliage, of the richest hues, and must command attention from the veriest hater of cultivated flowers. Greenhouses are becoming every year more common, and will continue to, as people accumulate wealth, and satisfy themselves there is "no place like home."

This perpetual moving from place to place is prejudicial to fine gardening; hence all those who feel interested in seeing homes tastefully adorned, must be pleased to observe a less migratory spirit in the population.

Once the country or town citizen has satisfied himself that his present location suits his tastes, how can he better spend a little money, than in adorning his home with a tasty garden, and as one of the necessaries of such a garden, a greenhouse for the beautiful idea of *flowers* in *winter*. Where, so pleasantly and profitably, can his children while away their youthful days, and carry vivid recollections of such, on their journey through life, as in their garden *at home*. No bad influence is working on their minds while chasing the butterfly in such a place. In fine, it can hardly be conceived of an evil to result from a garden. They are a rich gift, and miserly must he be, who can, but will not, adorn his home with a pleasant garden.

EDGAR SANDERS.

THE GRAPE CROP.

It is a fact that many of our standard fruits, are, in these latter days, liable to diseases and failures which were unknown in earlier times. Some of these diseases, in our present state of knowledge, at least, are beyond the control of man; others, we think, may be greatly mitigated or entirely prevented.

The grape, in the West particularly, is becoming one of our most important fruit crops, but frequent occurrence of mildew or blight is a matter of some discouragement; yet we think, by proper management it may, in a great degree, be checked, if not entirely prevented. We have watched the progress and development of this disease in various localities and under various conditions, and we feel quite confident that under a proper preparation of the soil before planting, and a correct system of pruning and culture, much can be done to remedy this evil. The soil of many of the most successful grape growing countries, is of volcanic origin, and is stony, porous and dry. This would seem to suggest that high, well drained situations, with a southern or eastern exposure, be chosen for the vine—that where the ground is not remarkable for natural drainage, a thorough system of artificial under draining should be adopted—that clean culture, or a thorough mulching of straw or other dead materials, be employed. Another material benefit, we think, would result from giving the vines wider space, and securing a more thorough ventilation; and the course of pruning be adopted that was suggested in a late number of the present volume of the *Valley Farmer*.

We have great hope of some of the numerous new seedlings that are now beginning to attract public attention. Many of these are more hardy as it respects cold, than either of the two old varieties, the Isabella and Catawba.

The great amount of capital now employed in this branch of horticulture renders it important that various experiments be made upon the

points we have suggested, as well as any others that may occur to cultivators likely to result in protection from the evil that has proved more than usually disastrous the present season.

CULTURE OF THE FILBERT.

Filbert, or as it is sometimes called Filberd, (*Corylus Avellana,*) so named, says Pliny, from Avilla, a town of Campania, where the best, in early times, were cultivated. In England the filbert is extensively cultivated. In the county of Kent, where it grows with great luxuriance and productiveness, many hundred acres of land are devoted to it, and from here the London market is principally supplied. In the United States we know of no attempt to cultivate the filbert, except as an ornamental tree or shrub, the American markets being supplied by importation, which amounts annually to a large sum. There are many portions of the United States where the filbert will flourish equal to any part of the world, and from the large quantity required to supply our markets, it might be rendered a very profitable crop. In extensive nurseries the filbert is propagated as an ornamental plant, but for an extensive orchard the plants should be grown from the seed. Like other nuts, the seeds should not be allowed to become dry before they are planted. The best method of planting is to place the seed in boxes of sand as soon as they are ripe, and expose them to the weather, taking care that mice do not get to them, and in the spring sift the sand from the seed and plant them in well prepared ground in nursery rows.

A soil that is naturally dry rather than moist, is best suited to this nut, but a dry, sandy or gravelly loam, is preferred. They will, however, succeed in any good soil. There are a number of varieties of the filbert—two species are found to be indigenous in the United States.—One of these, the *Corylus Americana,* or common hazel-nut, grows in many of the States, and flourishes in great luxuriance, hence we conclude the more improved kinds might be cultivated to profit. In England the kinds commonly grown and considered best, are the red and the frizzled. The average crop in that country is considered about 800 pounds per acre, but in favorable seasons more than three times this quantity have been gathered from an acre.

We are led to notice this subject from seeing, the past season, two parcels of these shrubs growing; the one being left to nature grows very much after the manner of the native American variety, in clusters or clumps of bushes, small in size, owing to the immense number of shoots that are allowed to spring up. These, though receiving no care, have produced quite a crop of fruit. The others referred to are in the garden of a friend, and were grown by him from the seed and cultivated in the form of trees, and so unlike the plant as it is generally grown, that we did not recognize it. These trees, perhaps a dozen of them, are now about seven years old, and ten or twelve feet high, and from three to five inches in diameter at the base, forming beautiful, compact, round-headed trees, as regular and symmetrical in form as a well grown European Linden, which they very much resemble, and which we took them to be. Whether grown for the fruit or as an ornamental tree, they are very beautiful when trained in this way. When propagated from the seed, with a little attention at first, they show no disposition to throw up suckers.

In any of our Western lands, natural to the hazelnut, we have no doubt any of the larger varieties would grow vigorously, and in a regular orchard would form a beautiful object. From what we have seen we would recommend for cultivation in this country the Cosford, Frizzled and Northampton Prolific varieties.

CATALOGUE OF FRUITS BEST SUITED TO CERTAIN LOCALITIES.

In our report of the proceedings of the American Pomological Society, published in the last number of the *Valley Farmer,* we alluded to the plan proposed by Mr. Samuel J. Walker, of Massachusetts, viz: that of publishing, besides a catalogue and description of all the fruits ever grown in this country, catalogues embracing the fruits adapted to each State and district of country, so that no cultivator shall be at a loss to select just what he wants, without including a great number of varieties, however good, when grown in a soil and climate suited to them, but which frequently prove failures in other situations. Each session of the American Pomological Society adds to the number of the members, representing new sections embracing a still wider field of observation, though comparatively but a limited portion of the country is yet fully represented, and hence the lists recommended by the society for general cultivation will require considerable modification to adapt them to all the various climates and influences of particular States and localities. And while in the infancy of this society,

it is impracticable to perfect such catalogues as Mr. Walker proposes, local associations in every considerable fruit growing section can so modify and correct the list of the parent society, as to make it all that may be asked for at present for particular locations. This should be one of the chief duties of every horticultural society, and we believe that all of the most prominent societies in the country have corrected and prepared such lists, subject, of course, to improvement, with the experience of each revolving year. Yet the number of these associations or societies is too limited. In every neighborhood where fruit growing takes the rank among the crops of the land, to which it is justly entitled, societies should be formed and meetings held for this purpose, as well as to encourage fruit growing in general. There is a woful lack of information upon the subject of cultivating fruits. There have been fruit trees enough planted in the country, within the last fifteen years, to more than double the aggregate crop at the present time, had they received the proper care and attention they require; but instead of this, of the immense numbers planted within the time we have named, not one-third are now in existence.

There is no cultivated farm crop that might not be doubled in its acreable product with proper management and cultivation. This is more than proved true by isolated cases of good culture in different sections of the country, and the cultivation of fruits receives a much less share of attention than the farm crops generally. We would therefore urge the formation of fruit associations or Horticultural societies throughout the country for the purposes of general information and the promotion of fruit growing.—Where farmers' clubs exist this may form a topic for discussion without a further special organization.

In our November number we made a call for a meeting of the Missouri Fruit Grower's Association at Jefferson City, on Wednesday Jan. 5th, second week after the meeting of the Legislature. We will repeat the importance of a full attendance of all those interested at this meeting, and one of the most prominent duties should be to correct the list of fruits adapted to this region. We have now a rapidly increasing population, not only in Missouri, but throughout this section of the West, and while many of the neighboring settlements are in their infancy, and unable at present to form such associations, the information that may be disseminated by this association will be of vast importance to new settlers, as well as to promote the interest of its members. We therefore hope there will be a general attendance, not only from Missouri, but of those interested from neighboring States.

THE LINDEN TREE.

We know of no deciduous tree more beautiful than the European Linden. As an ornamental shade tree for streets, lawns and door yards, it has no rival. It thrives in almost all soils, grows in the most perfect symmetry of form, and the trees are of very uniform habits when planted in streets, along the roadside or avenues, and present a most beautiful appearance. And with all their beauty they possess another rare virtue, perfect cleanliness and freedom from vermin. This tree is generally found in all extensive nurseries, but it is not propagated to that extent which its beauty and value demand.

Loudon, in his Encyclopedia of Plants, enumerates eight species or varieties of the linden or lime tree, (*Tiliacæ*), but only one of these European varieties is usually found in the American nurseries. The American lime or linden tree, commonly called Basswood, is also a handsome tree, but with larger and thinner leaves, and grows less compact in its branches than the English cultivated variety, yet there are few native trees more desirable as a shade and ornamental tree. We would recommend these among other rapid growing trees for shade, shelter from the cold winds, and as an ornament to the landscape upon the prairies.

Nothing can contribute more to the comfort and beauty of this interesting portion of our country than a judicious selection of well cultivated trees. These broad, open, fertile plains, so inviting to the cultivator, seem to lack this one finishing stroke of art and nature to render them the most beautiful of all countries. We never ride over the prairies and witness the many otherwise comfortable dwellings of the industrious and hardy farmers, often standing without a tree to shelter the homestead, the animals or the crops, but we feel a kind of irresistible desire to add what nature seems to have withheld—a variety of well arranged ornamental trees.—Without these the prairie home seems to present such an out-door aspect, that it always suggests a chilling idea of discomfort.

The linden may be increased by layers or seeds. If by layers, the tree must be cut down close to the ground, and from its roots a great number of shoots will spring forth; these will

be strong enough to lay down the following autumn. But trees raised from the seed are far preferable to those raised from layers.

The Russian bass-mats are made from the inner bark of the lime tree, and are largely imported into the United States and used for packing furniture, trees, &c. The shreds of these are also used by nurserymen for bands in budding fruit trees, &c. The bark of the American linden or bass is also excellent for this purpose, and is easily prepared by stripping the bark from the tree in the spring and placing it in water for a few weeks, when the inner bark may be separated into thin shreds or layers and is stronger and better for bands for nursery purposes than the Russian variety. The wood of the linden tree is extensively used by the carver and the music instrument maker. It is also burned into charcoal for the manufacture of gun powder, and is considered scarcely inferior for that purpose to the charcoal produced from the alder and willow.

The lime tree appears to have been held in high repute in ancient as well as in modern times; for we learn from Theophratus that it was known to the Greeks, and Pliny speaks of it as a tree highly esteemed by the Romans not only for the ornament and shade it afforded but for the value of its wood, and the variety of purposes to which it was adapted.

Trees of this variety, nearly two hundred years old, are now standing along the streets of Continental, as well as English towns, where their width would admit of it, affording a pleasant shade and protection during summer heats, and it was extensively used in that style of gardening called architectural, as it bore cutting with the knife or shears with comparative impunity. Examples of this style are now to be met with in various parts of Europe, where pyramids, arches and colonnades are formed of this tree, sometimes producing the most imposing effect.

Leaving the question of ornament entirely aside, we think that this among other varieties of trees, as a matter of *economy*, may be planted to great advantage on the thousands of open farms of the west as a shield and protection to orchards, gardens and fields. The difference in the crops would pay the cost many times, besides the value of the timber at a more remote period.

We must continue from time to time to remind our readers of these things, making such suggestions upon the subject of planting &c., until we can see the face of the country dotted here and there with thrifty trees, casting their refreshing shade over man and beast in summer as well as sheltering them from the chilling blasts of winter.

Now is a time of comparative leisure upon the farm, and any mild weather in winter will answer for transplanting.

When trees are removed from the nursery or the woods, care should be taken to preserve the roots as perfect as possible, and to cut back the branches two-thirds or three-quarters, leaving a few handsome branches, with sound terminal buds from which the new head is to be formed.

[For the Valley Farmer.]

Fruit Grower's Meeting---Agricultural College.

Messrs. Editors:—I was much pleased to see a call in the Nov. No. of the *Valley Farmer*, for the friends of Horticultural pursuits to meet at Jefferson City, on the second week of the sitting of the Legislature. I hope the fruit-growers of the State will take sufficient interest in the formation of a society, to meet at the appointed time, and aid in its establishment. It is certainly needed, and will do much to advance the fruit growing interests of Missouri.

We have the best State in the Union for the successful cultivation of fruits, and our resources for shipping all our surplus to good markets are behind those of no State. Our soil is admirably adapted to the production of all the best varieties, and we doubt if specimens of greater merit can anywhere be grown than in Missouri. It is time that the merits of our State as a fruit producing one, were made known to the Horticulturists of the country. Nothing will have a greater tendency to spread this knowledge throughout the country than the formation of a State Horticultural Society.

I would also suggest the propriety of holding a meeting on Thursday, January 6th, (the day following the fruit grower's meeting) for the purpose of taking some steps towards the establishment of a State Agricultural School. The farmers have it in their power to have anything they want, if they can only have concert of action. What do farmers say to holding a meeting for this purpose at the time suggested? I hope they will respond favorably.

Let it not be all talk about this fruit grower's meeting and a State Agricultural College, but let us go to work and have them permanently established, and have our State stand where Nature intended it should, behind no State in the Union. H.

Boonville, Mo., Nov. 20th, 1858.

[Written for the Valley Farmer.]

GARDENING OPERATIONS FOR DECEMBER.

BY CAREW SANDERS.

THE KITCHEN GARDEN.

If not already done, all preparations for winter should be completed in this department.—If any roots yet remain out, (except parsnips and oyster plants,) they should be housed without delay. The asparagus plants should have their tops cut off close to the ground and they should be burned on the bed. The weeds, if any, should be hoed and raked off, and a top dressing of manure applied to be forked in, in Spring. Rhubarb should have a few forks full of manure spread over their crowns. Both with this and the asparagus, it serves to protect the buds on the crown of the plant, and fertilizes the ground, the rain carrying down the fertilizing matter, to be appropriated by the plants next season. These plants are both gross feeders, and require a deep, well-manured soil.

When these necessary items have been attended to, little more remains to do, although during mild, open weather, very much may be done that will serve to advance the early spring work—such as hauling on manure, throwing the ground into rough ridges, opening drains to carry off surface water, collecting bean poles, pea brush, &c. Hot bed sash may be repaired and painted. Seeds cleaned out and the stock overhauled, so as to early ascertain what sorts you have and the quantity of each, to enable you to procure what is lacking from the seed-stores early.

ORCHARD AND FRUIT GARDEN.

Preparing Ground for Planting Orchards.—The more elevated lands in this section are no doubt to be preferred for orchards, over the deep, alluvial, or vegetable soils of a lower level, for though the soil may be thinner and poorer, and the trees make slower growth, yet they will be more hardy and durable, and more productive, bringing, perhaps, smaller, though higher flavored and better keeping fruit. Such situations should be selected if possible.

The preparation of the soil should be the best that can be given it with the plow and harrow. The double Michigan plow is preferred by many to plow deep and break up the subsoil, but a regular subsoil plow might follow an ordinary plow, and loosen up and break the subsoil still deeper with the same amount of strength. It matters but little which way, however, so it is only done. After the deep plowing, it may be well cross plowed with an ordinary plow and a harrow run over it.

During this, or the next two months, in open weather, the ground may be laid out, and stakes put down where the tree is to be set. Large, wide holes may then be dug, at any time, and the soil thrown out all round, to be exposed to the frost, air and sun of winter, to pulverize and ameliorate previous to being placed around, and in contact with the fibrous roots of the young tree.

That this is an important auxillary in the successful cultivation of fruit, no one, we think, will doubt, besides being a saving of time in Spring when there is always plenty to do, and when the proper preparation of the holes, and soil to fill in with, will not, perhaps, be performed.

Apples, gooseberries and currants may be pruned this month. But our advice is not to prune cherries, peaches, dwarf pears or grape vines till February. These are all, in our opinion, liable to receive injury from excessive freezing, for though the wood may not get killed back, yet the buds often get killed in part, and others so injured that they break very late and weak, and hardly recover from the effects during the whole summer.

FLOWER GARDEN AND SHRUBBERY.

If the tender plants have been well cared for, and the garden put in neat order, as advised last month, but little remains to be done in it, during this and the succeeding month or two.

It is to be presumed that some of our readers are attempting to preserve through the winter, in cold frames or in the window, the tender and delicate plants that afforded them so much gratification and pleasure during the summer months, in the hope that they may save them alive to be again rewarded by their beauty and fragrance. We will try to aid such by a few remarks, bearing upon the treatment of such plants in general, that is, plants that are required to be kept over winter, and not wanted for winter blooming.

Plants intended for this purpose should be taken up and potted as early in the fall as possible, in order that they may, first, get well reestablished at the root, and then well hardened by exposure to the sun and air and cool weather. As the weather becomes colder, and winter approaches, they should be kept dry, and the frame in which they stand, and all surrounding objects should be as dry as possible. The bottom of the frame, or bed, should be well drained, and four or six inches of sawdust, coal ashes, or some such porous material spread over the bottom, to stand the pots in. The plants will need watering but very seldom, scarcely till the leaves are seen to droop, and no water should be spilled inside the frame, or on the leaves of the plants. Omit no opportunity of giving abundance of air. Raise the back of the light all day, during mild, open weather.—This dryness and exposure induces a hardiness of constitution which enables them to resist an amount of cold which, if in an opposite condition, would probably kill them outright. The glass should be covered over thickly at night, and the frost kept out if possible. But if a little frost should get in of a sharp morning, do not take the covering off till the sun has thawed them out through the cover. They will then sustain but little injury.

A Word for Evergreens.—Now that old winter has again stripped our fruit and forest trees of their leafy garments, and all around looks desolate and bare, the various evergreens stand out in beautiful and bold relief. You, who have door yards and gardens and not a single ever-

green tree set in them, just stop at the first garden you come to where they abound and observe the difference. How bright and cheerful they look, and where planted plentifully around the dwelling, especially on the North and West side, and a few years growth added, the shelter and protection they afford, from the chilling winter blasts, are not the least of their recommendation.

To see a neat cottage or the more pretending farm house, snugly embowered in bright evergreens, and screened from the wintry blasts, by belts and groups, judiciously arranged, would look like an oasis in the desert, and contrast strangely, but agreeably, with the generality of farm house surroundings. For ornament or shelter nothing surpasses the Norway Spruce, an extremely hardy tree and fast grower, with dense masses of branches and foliage which will bear cutting into any form, but makes a beautiful tree if left to itself, either singly on the lawn or in groups, assuming different shapes and forms, some towering up in spiry pyramids, at the rate of two or three feet a year—others spreading their horizontal branches in thick, dense masses through which no wind can penetrate. Taken altogether, this must stand at the very head of our list of useful and ornamental evergreens.

But to include a variety of the more hardy sorts the Scotch Pine perhaps stands next.—Then the light, airy, elegant White Pine, the graceful, feathery Hemlock, the stiff, stately Austrian pine, and the Balsam Fir. Nor should the native Cedars and Arbor vitæ be left out, but more especially the Siberian arbor vitæ, which makes a low, spreading, beautiful, bushy tree.

Spring is the time for planting all these, and we but call attention to them now in the hope that it may awaken in the minds of our readers a desire to adorn and beautify their homes, and also to point out the nakedness and defects of a garden without evergreens.

St. Louis Nursery, Nov. 24th, 1858.

ILLINOIS STATE HORTICULTURAL SOCIETY.

A meeting of this Society will be held at Bloomington, on the 14th, 15th, 16th and 17th days of December, 1858, for the election of officers and the discussion of Horticultural subjects. Friends of Horticulture throughout the State are invited to attend, and bring notes of experiments or observations they may have made in any branch of this science.

The leading Pomologists of the West are pledged to attend, and a discussion of unusual interest and profit is anticipated. Several lectures and essays are expected. The cultivation of the plum and pear will occupy a prominent place in the discussion.

This meeting is not designed for a fruit show, yet it is desirable that members should bring specimens for examination and comparison, especially of new and promising varieties. Persons not members may become so by sending their names, with one dollar, to Dr. Hull, at Alton, or to me at Lisbon.

This will entitle them to printed copies of the discussions, essays, &c., of the Society, and will prove a profitable investment to every one who owns an acre of ground or designs to plant a dozen trees. We hope for a large gathering. The friends at Bloomington will have their "latch strings out." O. B. Galusha,

Corresponding Secretary.

To Keep Rabbits from Barking Trees.

The time is approaching when the young fruit trees will be barked by the rabbits unless some means is used to prevent them.

I will give the readers of the *Valley Farmer* a very good and cheap preventive, which is better than a cure. The following is a very simple plan that I have seen used by my father many years ago against the incursions of rabbits for the young trees in the orchard, and I have several times tried the same experiment for trees in the nursery rows and find that the rabbits will not come near them. Get some common tar and some rope yarn and make a few stakes and drive them into the ground around the tree, leaving them about ten inches above ground. Then dip the yarn in the tar and drip it out; tie the end to one of the stakes and run it round the tree, giving it a turn around the head of each stake and fasten where you began. When the yarn gets hard and dry, dip again in the tar. For nursery trees the plan that I used was to have good long stakes driven down pretty well in the ground and split in the tops, standing about fifty feet apart in the rows and four inches from the trees; fasten the yarn to the stake. at the end of the row, and run it along through the splits in the others to the end, then taking a turn, go along the other side the same way.

When the snow comes nearly to the top of the stakes pull them up a little as they require it, so as to keep the yarn about seven or eight inches from the surface.

The advantage of this plan is that it can be so quickly done, and those who will do it will not have their young trees barked and injured by rabbits this winter. J. Wilson.

To Prevent Rabbits from Barking Trees.

Eds. Valley Farmer:—I noticed in the February number of the *Valley Farmer* a piece with the above caption. The remedy is by no means a safe one here in Missouri, where the rabbits are so plenty. I have seen it and tried it myself upon my father's orchard, which consists of about 500 apple trees. A hogs liver, (or the liver of any other animal,) will form a glue that will keep the animals off until a heavy rain, which will frequently wash it off in mid winter, and leave the trees exposed to the teeth of the destructive animal as before, by which process we have lost more trees than would have paid us for extra trouble. The best remedies I know of are hazle-brush, corn stalks, &c., to be stuck around the trees. Crab grass twisted in small ropes and wound around the tree or prairie grass lapped around the tree without twisting. Newspapers are also good.

E. F. Darbey.

Hickory Grove, Mo.

The Apiary.

THE PROFITS OF BEE CULTURE.

Among the numerous provisions of the Wise Creator, the lives and labors of several species of insects are devoted for the comfort and happiness of mankind, and the most wonderful of these in all animated nature may be reckoned the Honey Bee. Its self-sacrificing industry, its peculiar habits and instincts have been subjects for the investigation of philosophers and naturalists from the earliest period of civilization to the present time. The bee, like the silkworm, is a domesticated insect, and what is remarkable, it always follows, but never precedes the march of civilization. It is the laborer and companion of cultivated and refined mankind. With proper care and attention, the aggregate result of the labors of this tiny insect, predicated upon the most reliable data, would astonish the world, and yet there is not one in a thousand of our rural population who avails himself of its labors, or who ever studies its mysterious nature and habits. But in all ages of the world there have been found here and there single individuals who have made the bee a subject of almost exclusive and life long study. Among these, in the present day, we will mention the Rev. L. L. Langstroth (whose address we have forgotten) and Mr. Quimby, of St. Johnsville, N. Y. With the Rev. Mr. L., we have not the pleasure of an acquaintance, but we have frequently taken occasion to call on Mr. Quimby and examine his apiary. He has devoted twenty-five or thirty years to bee culture, and perhaps no man living understands the subject better or has followed it with greater success. In this there is nothing intricate or difficult, but like every other business, to be successful, it must receive care and attention. As with other crops, something depends upon the weather, a cold, wet season is unfavorable, while a warm one with rain sufficient to develop the blossoms, is the most favorable for the accumulation of honey. Mr. Q's. crop this season will amount to from 15,000 to 18,000 pounds, or about *nine tons*. This is about one-third less than his crop of 1856, which was a most favorable season. This honey is sold in the New York market, and is mostly carried in the comb in boxes as deposited by the bees. In quality it cannot be surpassed, being chiefly made from white clover. The boxes are made with four sides of glass, in a light, neat form, and the whole handling and management being conducted in the most skillful manner, renders it saleable at the highest market prices. At the late State fair, at Syracuse, Mr. Quimby received the first premium for the best exhibition of honey.

There is a limit to the pasturage for bees as well as for any other kinds of stock, and on this account Mr. Q. distributes his bees over an extent of country equal to about ten miles square, never allowing but about one hundred hives at any one place. Those nearest home are owned and attended to by himself and others immediately interested with him in their management, while these colonies, owned by others, are under the same general supervision, the boxes being manufactured and supplied by Mr. Quimby, and he taking the crop at stipulated prices.

From the data furnished by this crop it is easy to calculate what an immense amount of the richest products of the earth may be gathered by these industrious and untiring insects, provided a little care and attention are bestowed upon them. It may be remarked however, that every section of country is not equally rich in bee pasturage, yet there is scarcely a neighborhood, where ten times as many bees could not be kept as there are, extending the aggregate market value of honey to many millions of dollars. The Mohawk valley affords an abundance of the best kinds of flowers for the keeping of bees, and it was this fact that induced Mr. Quimby to settle there; but there are thousands of other sections equally favorable.

The plan of the hives and the mode of managing the bees at this establishment are those which are dictated by plain common sense, and have been clearly illustrated by Mr. Quimby in his work entitled "The Mysteries of Bee Keeping Explained." These "Mysteries" embrace no patent contrivances, although every patented hive, bee palace, or remedy for the bee moth has been faithfully tried and discarded by the author. Since the publication of this work, however, Mr. Quimby has been induced to try the *moveable frames*, patented by the Rev. Mr. Langstroth, and is favorably impressed with their practical utility, but may be improved, he thinks, with some slight modification. These frames, when properly constructed, interfere in no way with the natural economy of the bees, but conform in strict accordance to it, and still securing the formation of the comb of the entire hive in separate and independent frames, so that any one frame may be removed or transferred at pleasure, giving free access to every part, preventing depredations from any of the common enemies of the bee, and securing several other advantages that we have not named.

Bee keeping affords a most interesting study, besides the profit that may be derived from it; but to be successful, one must take an interest in them, and learn their habits and attend to them. Without this no one need expect success. It is like the simple business of fruit growing. Nine hundred trees in every thousand that are planted, never produce, owing to downright, unpardonable neglect.

The Home Circle.

DECEMBER.

Another December has come. How fast they come! And it brings the close of another year. What kind of a year has it been? To the country we all know what the year has been. It has had its strifes, its debates, its victories, its defeats, its alarms, its rejoicings, its parade and noise, yet it has been much like other years of general peace and prosperity.

To the farmer it has been a somewhat trying year. Its wet spring and luxuriant summer, crowded his work into a short space and out of season, and the pecuniary embarrassments have crippled his operations. Still he has reason to rejoice and be grateful to a Gracious Providence for the share of good that has fallen to his lot.

To the mechanic and merchant the year has given severe trials. The excesses of the few past years have centred their baneful results largely in this. Trade has felt crippled. Old scores have demanded payments, and the means have been slow in coming. There has been a general effort to escape from the thraldom of indebtedness, but not very much has been done towards relief. But still the year closes with better prospects. A deranged commerce is improving. Money is glutting the great hearts of trade. Capitalists begin to look out for profitable investments. A spreading abroad of the surcharged currency must follow, when the mechanic and farmer will realize its influence on their products.

To the publisher, the year has been a hard one. Books and papers are esteemed luxuries that may be dispensed with in hard times. His bills are often put off, or crowded into the end of the year. Some leave him to publish and live as best he may, and others are doubtful friends, who pay when they can without any possible inconvenience to themselves. Yet, on the whole, the publisher may thank his stars that he still lives, with the prospect of another year of toil and struggle before him. He has had many good friends, golden readers, who count his labors the world's hope, and who would forego every useless luxury before a paper should be stopped or the publisher's bill be unsettled. Of all classes, perhaps the publishing have suffered most by the financial troubles of the times. Still, they fight on, like brave soldiers, who know by the temper of their wills that victory awaits their toils. Could December fairly settle up their old scores, they would push out into the broad sea of next year with wide spread sails and hopeful hearts.

To the home circle, the year has been much like other years. To some there has come the shadow of death and the dark form of sorrow. Many a child and companion and friend has gone to the upper home, leaving aching hearts behind, and vacant places and sad memorials to tell that they were here but are not. To others have come bridal days and sweet new friends and cherub infants and beautiful tokens of love, and fresh, warm hopes. Oh, the joys of home, how often have they been felt in ten thousand secluded spots, too sacred for the eyes of the world. And how many homes have been blessed with the hopes and joys of religion, with the holiest virtues and the sweetest peace.

To the individual, what has been the year? This is the great question with us all. What have we done for ourselves, to improve our intellectual and moral conditions, to advance our spiritual interests, and benefit the world in which we live? Have we grown wiser, better, more useful? If not, then a cheerless December is this to our souls. If the retrospect of the year does not foot up a bill in our behalf, how sharp must be the rebukes of our consciences, and what a blot on the historic page of life will it make. Look back, oh, man, through the past twelve months, and be honest with thyself, as thou dost read the record thy life has made. For thy good thank thy Father in heaven; for thine evil, ask His forgiveness, then turn to the future and with a prayer for His blessing, go humbly forth to duty.

WINTER.

The northern blast, as sharp as a knife, and the robe of white over all the fields, as cold as ice, announce the sudden approach of winter, the inexorable tyrant of the year. Hard and cruel winter! How he cuts down the fair flowers of the sunshine, the verdure of the field and forest, and the fair hopes of joy to many a poor mortal. How he drives away the singing birds, and the insect tribes that make night and day vocal with their joyous melody, and hurries in the barefoot children from their out-of-door gambols. How he huddles the sheep and cattle about the barns, and nestles the pigs and hens and cats and dogs in their snuggest quarters. How he hurries the girls in their chamber work, and sends in the boys with singing fingers and toes and ears to be in the house-wife's

way. How he turns out-door work into the house, and makes many a bustle about the fire to the confusion of grandmothers and alarm of the baby.

A common tyrant is winter. He lays his cold law upon everything; all earth prepares for his coming. But cruel as he is winter has his pleasant side. Though he consigns a whole world of beautiful things to an early grave, he makes many a merry scene, and kindles in the heart of many a rustic swain a fire that burns all the warmer for the cold that forces him so near a fair one's side. To the young folks winter is a special friend. He sees to all their little wants, provides them with long evenings for parties and singing schools and weddings, and suppers and lectures, and all-sorts of merry-making occasions and especially, with excuses for much private *tete a tete* in well-robed sleighs and arm-in-arm walks and by snug little fires. How could the young folks do without winter? Sad to live in a tropical region where there is no time to make love.

The old folks too may have cozy times in the long winter evenings. In the chit-chat before the fire, how often the faithful old pair think over their wooing days and grow warmer than ever in the old flame. And then how good and kind they are. Winter keeps the youth-fire bright. There are few divorces in countries where there are long winters. The cold of winter makes the warmth of wedlock especially delightful. And winter evenings spent at home are the harvest seasons of matrimony.

Then again winter is a school-master, a little severe it is true, but intelligent and social withal. He opens his books in many a family circle and reads many an hour by the bright fire. In chilly Iceland, and cold New England, evening reading adds largely to the stock of information, and evening study makes many a rich scholar. To-night while my pen writes these words all Iceland reads and listens by its cozy firesides. It is the winter pastime among old and young. In every family quite a library may be read on winter evenings, and thorough scholars may be made to enrich and bless the whole country. Solid books well become the quiet, evening hour. Winter is the intellectual season of the year. Schools, Lectures, Lyceums, are in full operation now. Legislatures are now in session; and around all well-regulated firesides, the fires of thought are kindled. Unto winter belongeth meditation and sober, strong thought. His cool head is prolific of reflection. The philosophy of social life can be studied well only in winter. Moreover winter always promises spring. It is the cruelest season, yet the richest in its beneficent promises.

PLEASURE.

How much there is in this word to captivate the mind of man. Old or young, we court pleasure. Sober or gay, we have our pleasures.—Christian or infidel, we seek pleasure. Yet our pleasure differs according to our ideas of what is desirable. Our highest pleasure is in what we most desire. Some seek pleasure in folly, drunkenness, wantonness, fashion; some in gaiety, mirth, music, dancing; some in wealth and its display; some in books, knowledge, science, art; some in religion, in pure life, in doing good and in being good. There are as many kinds of pleasure as there are classes of people. If we are wise we shall choose such pleasure as will do us good while it affords delight. Such are the pleasures of true friendship, pure love music, art, science, usefulness, true domestic life, books, improvement, a truly christian life. Our pleasures should be elevating, healthful, innocent, and at the same time such as instruct and benefit. Such should be the pleasures of home and home friends. Instead of frivolity, let good sense inspire us, so we shall choose our pleasures with a view to profit. Pleasure should always be secondary. We should get pleasure out of duty. We should always do what is best and then extract pleasure from it. We should seldom seek pleasure for pleasure, but seek our best good and make that our pleasure.

Humming Birds' Tongues.

The tongue of a humming bird is very curious. It has two tubes alongside of each other, like the two tubes of a double-barrelled gun. At the tip of the tongue the tubes are a little separated, and their ends are shaped like spoons. The honey is spooned up, as we may say, and then it is drawn into the mouth through the long tubes of the tongue. But the bird uses its tongue another way. It catches insects with it for it lives on these as well as on honey. It catches them in this way; the two spoons grasp the insect like a pair of tongs, and the tongue bending, puts it into the bird's mouth. The tongue, then, of the humming bird is not merely one instrument, but it contains several instruments together—two pumps, two spoons, and a pair of tongs.

XUM

The Young Folks' Page.

ASTRONOMY.

Messrs Editors.—I was very much pleased in reading your account of Comets, in the November number of the *Valley Farmer*. I am a farmer's boy, and, like many others in this part of the country, have but little opportunity to study such matters, and it would be interesting to me, and I have no doubt it would be so to many others, if you would give occasionally a short chapter on astronomy in the Young Folk's Page. S. R.

Remarks:—The first astronomers, of which we have any account were farmers—shepherds, who, while watching their flocks by night, observed the movements of the planets, and distinguished them from the fixed stars. And this was done without the aid of the superior telescopes employed by the astronomers of the present day. Considerable progress was made in the science of astronomy at a very early period of the world; even the constellations—the arrangement of the stars within certain imaginary lines, representing quadrupeds, birds, fishes, and other objects, in order to mark their location and to render their study more easy, was the work of the heathen philosophers. And this arrangement is still continued upon our celestial globes and maps to the present day. In the book of Job, the first writings of the Bible, this beautiful allusion is made to the subject—"Cans't than bind the sweet influences of *Pleiades*, or loose the bands of *Orion*?" And from that early period to the present day, the study of the stars and the movement of the planets have claimed the attention of great and good men throughout the world.

We are pleased to receive the request from our young friend to furnish some remarks upon a subject so sublime as that of astronomy. Although so remote in the regions of space are the unnumbered worlds that float in it, yet there is no science that has been brought to a greater degree of perfection. And no mind can contemplate the movements of these heavenly bodies, and the wonderful natural laws that govern them, without having it drawn from nature up to nature's mysterious God. We will promise, then, in some of the future numbers of the *Valley Farmer* to give an occasional chapter on astronomy, and perhaps may do so in some of the early numbers of our next volume.

FARMERS' BOYS.

In the wide world there is no more important thing than farmers boys. They are not so important for what they are as for what they will be. At present they are of but little consequence too often. But farmers' boys always have been and we presume always will be the material out of which the noblest men are made. They have health and strength, they have bone and muscle; they have heart and will; they have nerve and patience; they have ambition and endurance; and these are the materials that make men. Not buckrams and broadcloth, and patent leather and beaver-fur, and kid-gloves and watch-seals are the materials of which men are made. It takes better stuff to make a man. It is not fat and flesh and swagger and self-conceit; nor yet smartness, nor flippancy nor foppery, nor fastness. These make fools, but not men, not men such as the world want, nor such as it will honor and bless. It is not long hair, nor much beard, nor a cane, nor a pipe, nor a cigar, nor a quid of tobacco, nor an oath, nor a glass of beer or brandy, nor a dog and gun, nor a pack of cards, nor a novel, nor a vulgar book of love and murder, nor a tale of adventures, that makes a man or has anything to do with making a man. Farmers' boys ought to keep clear of all these idle, foolish things. They should be employed with nobler objects. They have yet to be men of the clear grit; honest, intelligent, industrious, ambitious men who shall love their country and their kind. With the means they possess how easy for them to be in fact the first class men. They have land and stock and tools; they have health and time and mind; they have schools and churches and papers; they have books and perseverance and the heart and hand for work. More than this they need not. Let them awake and work and read and study. It is not all work; nor yet all study that will make them men of the right stamp. They must work intelligently and study with an earnest purpose of being benefitted, and then they will become what they ought to be, the real men of the world.

Young Man, yours is a *noble* heritage, a glorious mission, and if true to your position, your country will have reason to bless you. Then make an effort; act like a man. Lay aside your cane, tear off your gloves, stop swearing, stop drinking beer and smoking cigars, stop hunting the saloons, and strutting the streets; obtain an honest employment, use your money in cultivating your mind. "Seek to *be* rather than to *seem*," put on your rightful dignity, and *never* again be an idler.—*Earnest.*

Editor's Table.

Close of the Volunme.

The present number closes the Tenth Volume of the VALLEY FARMER. It also terminates our yearly contract with more than nine-tenths of our subscribers. Notwithstanding this, we are reluctant to part company with any of them. Our intercourse with them has been pleasant and agreeable to us, and we hope and believe it has been equally so, and likewise highly profitable, to them. But our standing rules, like those of every other similar periodical in the land, require a renewal of subscriptions in order to secure a continuance of the work to old subscribers. We therefore hope that our old subscribers will not only renew their subscriptions, without delay, but that they will associate their neighbors' names with their own, and forward them for the opening volume for 1859. And we would respectfully solicit our patrons to renew at as early a day as possible, so that we may know how large an edition to print for the commencement of our new volume. We expect a very large increase of subscribers, and feel confident that our friends, all over the country, will do all in their power to extend the field of usefulness of our journal.

In regard to the New Volume, we do not know that any pledges from us need be made. We flatter ourselves that the character of the work, since it has been in our hands, is a sufficient guarantee of its future usefulness and value. One fact is established, viz: that the VALLEY FARMER is among the fixed institutions of the West. It has steadily extended the area of its circulation until it numbers on its subscription books thousands of the most intelligent and prosperous farmers in every State in the West, as well as many in other sections of the Union, and even in Australia, and other distant lands.

We most heartily thank our numerous friends who have used their influence in extending the circulation of the Valley Farmer, and it affords us pleasure to believe, as we do, that every subscriber, if he has heeded our counsels, has received in return, many times the amount of his subscription.

We are pleased to announce a slight change in our arrangements with the Louisville Publishing Office. The encouragement received from that section of the West, has induced us to employ a publisher independent of the Editor, at that place, in order that the latter may devote his entire time and attention to the Editorial department of the work, affording him time and opportunity to mingle more with the farmers, and to note down and give our readers full accounts of the numerous improvements that are now going on in the science and practice of farming, in the various sections of the land. In accordance with this arrangement, the Editor's office in Louisville will remain where it is, and Mr. A. GUNTER, Bookseller in the same building, No. 99 Third street, will be the publisher of the work in that city.

Renewals.

Some of our subscribers failed to renew their subscriptions as they expired during the past year. We send the December number to them, as a gentle hint that we would be pleased with their company for the year 1859. It is much better to begin with the volume, so that every subscriber may know when the time he has paid for expires. Consequently now is the time to subscribe. We cannot deviate from our established rules, and therefore hope that our subscribers do not think hard of us for omitting to send the Farmer to them after the expiration of their subscription Our terms are so low that we cannot afford to send agents over the country to collect subscriptions due us, and we are therefore compelled to adopt, strictly, the advance payment system. We know that failures to renew, with many, if not all, are caused by a little neglect. It will take but a few moments to write to us, or you can call on your postmaster and he will doubtless take pleasure in forwarding your subscription. If we publish such a work as you approve, we hope you will not fail to give it your earnest support.

Post Office and State.

Be very careful to write, distinctly, the name of the Post Office and State to which each subscriber wishes his paper sent. Many subscribers forget to give us the name of their post office, and it is almost impossible for us to find the name, even if they are old subscribers. Mistakes frequently occur in this way. Our list is so large that we might spend hours in search of a name, before finding it. By knowing the post office address of any subscriber, we can immediately refer to his name, but not without. Subscribers wishing to change the direction of their paper, must give us the name of the post office at which they are receiving it, as well as the name of the office to which they wish it sent, or the change cannot be made. A little care in these respects would save us a great deal of trouble.

Great Inducements to Agents.

We not only offer a most liberal discount to those who form clubs for the Valley Farmer, besides sending a copy free, to every one sending us fifteen or more names, but we offer FIVE HUNDRED AND FIFTY DOLLARS in Premiums. Persons wishing to compete for the premiums, or to obtain clubs as formerly, will be furnished with specimen numbers, Illustrated Prospectus, &c., by applying for them. Competitors for premiums may send their clubs to either office, as heretofore. They will all be brought together and compared on the first of April, when the premiums will be awarded. The names of the successful competitors will be announced in the May number.

THE HORTICULTURIST.—With this month closes the eig th volume of the Horticulturist. Within the short period, from its first establishment, there has been a most marked improvement in the cultivation of fruits and rural taste generally, throughout the country. For this improvement the country is indebted more to the lamented founder of this work, than to almost all other persons. The work is still in able hands, and with the new year another volume will commence. We speak for it a wide circulation. The prospectus will be found in our advertising pages.

THE HOMESTEAD, published at Hartford, Connecticut, by Mason C. Weld, one of the best agricultural papers in the country, has just entered upon its fifth volume. Among other improvements, the numbers of the new volume come to us with a neat colored cover well filled with advertisements. Our eastern friends know how to appreciate a good farm paper, and we are pleased to see such evidences of deserved prosperity.

GREAT INDUCEMENTS!!

$550 IN PREMIUMS!

THE VALLEY FARMER for 1859!

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Agriculture, Fruit Growing, Gardening, Stock Raising, Rural Economy, &c., &c.

Published at St. Louis Mo., and Louisville, Ky., on the first of each month, in Magazine form, each number containing Thirty-two pages exclusive of advertisements, making a volume of 384 pages, yearly. Illustrated with costly Engravings of Animals, Implements, Farm Buildings, Fruits, Flowers, &c.

(ESTABLISHED IN 1848.)

NORMAN J. COLMAN and H. P. BYRAM, Editors.

Some of the best practical farmers in the West are contributors to its pages.

The Valley Farmer will commence its ELEVENTH YEAR AND VOLUME on the first of January, 1859. We hope to make the New Volume more valuable than any of its predecessors have been, although it affords us pleasure to state that, so far as we have heard, it has given the utmost satisfaction to its thousands of readers. The friends of the FARMER (and we know it has its thousands of true, earnest friends) may rest assured that neither labor or money shall be spared to render it the most PRACTICAL, RELIABLE and VALUABLE Agricultural Journal published, particularly for the Western Farmer—to whose interests it is especially devoted.

In order to greatly increase the number of our subscribers for the New Volume, we have determined to offer the following SPLENDID PREMIUMS to those friends who will interest themselves in obtaining and sending the largest number of subscribers, so that they may be received by us before the 1st of April, 1859. Our subscribers will agree with us that they are premiums worth contending for. No traveling agent will be allowed to compete for these premiums. We have none employed at the present time.

THE PREMIUMS.

To the person sending us the Largest number of Subscribers, we will give one of

Manny's Combined Reapers & Mowers,

Manufactured by Messrs. Kingslands and Ferguson, of St. Louis, and worth One Hundred and Fifty Dollars.

This machine received the first premium (the Grand Gold Medal of Honor) for being the best Combined Machine, at the great National Trial of Reapers and Mowers, held at Syracuse, N. Y., in 1857.

To the person sending the Second largest list, we will give one of

Singer's Unrivalled Sewing Machines,

(Edwin Dean, Agent, St. Louis,) worth One Hundred and Forty-five Dollars. It received the first premium at the great World's Fair, held at Paris, France; first premium at the 2d annual Fair of the St. Louis Agricultural and Mechanical Association, and numerous other premiums.

To the person sending the Third Largest list, we will give one of

Coleman's Farm Mills,

Manufactured by L. P. Littlefield, of St. Louis, Mo., with Seive arranged for sifting Corn Meal, while grinding, and with Bolting machine attached for making family flour. Value, One Hundred Dollars. This Mill was patented June 23d 1857. It received the Silver Medal at the Metropolitan Mechanics Fair, at Washington, D. C., in March last, and has taken numerous other premiums.

To the person sending the Fourth largest list, we will give one of

Moore's Grain and Seed Drills,

Manufactured by Messrs. Elam & Littlefield, St. Louis, Mo., and worth Eighty Dollars. This Drill received the first premium at the Fair of the United States Agricultural Society, held at Louisville, Ky., last year; first premium at the late fair at St. Louis, and numerous other first premiums.

To the person sending us the Fifth largest list, we will give

Cuming's Patent Combined Hay, Straw and Corn Stalk Cutter and Crusher,

Manufactured by G. B. Griffin and Peter & Buchanan, Louisville, Kentucky, and worth Thirty-five Dollars. This useful Machine received the first premium at the late fair of the St. Louis Agr. and Mech. Assoc., also the Grand Gold Medal of Honor, for being the most important invention patented, for farmers, within the past three years. It has also received a large number of first premiums at different State fairs.

To the person sending the Sixth largest list, we will give a

Double or Michigan Sub-Soil Plow,

Manufactured by John Deere & Co., Moline, Illinois, (Jno Garnett & Co., St. Louis, Agents,) worth Thirty Dollars. This Plow was tried at the grand Field Trial of Implements, held by the St. Louis Agr. and Mech. Association, where it received the first premium. The Grand Gold Medal of Honor was likewise awarded to it, because, in the opinion of the Committee, it "would accomplish the most thorough disintegration of the soil with the greatest economy of labor, time and money."

To the person sending the Seventh largest list, we will give

Agricultural Books

to the value of Ten Dollars, to be selected from the catalogue of A. O. Moore, Agricultural Book Publisher, New York.

The Premiums will be delivered to the successful parties at St. Louis, Mo., free of any charge whatever. Persons from any State can compete for the premiums. Those who form clubs need not wait till the whole list is completed before sending in the names, as they can continue to add to the list, at any time, up to April 1st., at which time they will be counted.

The money should accompany the names as they are forwarded.

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Persons residing in Missouri and contiguous States, will enclose the money carefully in a letter and address

VALLEY FARMER Office, St. Louis, Mo.

Persons residing in Kentucky and contiguous States, will address VALLEY FARMER Office, Louisville, Ky.